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# Journal of the Association of American Medical Colleges

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JOURNAL
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# Relation of Association to State Licensing Boards*

HAROLD RYPINS
Secretary Board of Medical Examiners, State of New York

At the meeting held at Columbia University last year I set forth four questions which I thought this Association would have to answer if it were to satisfy the Federation of State Medical Boards that it would take the responsibility of medical education. Please do not get the idea that the State Boards are adopting any kind of threatening attitude in this matter. I think they are probably pretty well relieved to be free of the responsibility of medical education. Nevertheless, some one is going to have to regulate medical education and I think the State Boards are justified in assuming an expectant attitude and to watch the reaction of this body to those particular questions.

## Guarantee of Membership

The first question propounded was: Is the Association of American Medical Colleges, in accepting and maintaining in its membership a given medical school, prepared to offer reasonable guarantees to the examining boards that such membership means the maintenance of proper educational standards in that school?

I have been asked what I meant by that. A specific case may make it clear. As you all know, there was some difficulty down in Mississippi, and some of the state boards want authoritative information about the Mississippi situation. Shall we, or shall we not, recognize Mississippi graduates at the present time? One of the answers is: Mississippi is a member of this Association, and this Association is supposed to include only those members that maintain proper educational standards.

I think the state boards have a right to turn to this Association in such an emergency and get definite and authoritative information as to the educational status of the University of Mississippi.

How can such information be obtained? I know of absolutely no way to obtain real information about the educational standards of medical schools except by repeated, careful, intelligent, personal visitations, and I think this Association ought to be prepared by means of such

*Read at the Forty-first Annual Meeting of the Association of American Medical Colleges, held in Denver, Oct. 14-16, 1930.

inspections and visitations to tell the Federation of State Medical Boards the status of any particular medical school where questions may be raised regarding educational standards.

One thing which this body might be expected to do in assuming the responsibility for medical education, I think, would be to provide facilities for more frequent inspections of the various medical schools, particularly those medical schools about which there may be some question about educational standards. I think there will be many valuable by-products from such inspections. A man traveling from one school to another is bound to serve as disseminator of useful information and stimulus, and I think that alone would justify greater activity on the part of this organization.

### Significance of Membership

The second question I propounded was: Does membership in this Association imply with reasonable assurance that the component faculties will sedulously require and maintain proper educational standards for admission?

In other words, the Boards would like to know whether the schools making up this Association are in fact selecting the best available material for the study of medicine. The best answer I know to that question is the work that Dr. Moss, with the assistance of his committee, has been carrying on. Any one who has followed the development of this work during the last few years realizes that while there may be a great deal to be added to it, it is probably the most important single contribution in the field of selecting proper educational material that we have.

I understand there is some question as to whether or not the work of this committee can be extended and carried on because of lack of financial support. Certainly the value of this work to such an organization as this is so great that no activity would better justify your existence than to specifically answer the second question I propounded, and to guarantee to your Committee on Aptitude Test that it be provided with all the financial assistance necessary to continue these invaluable studies.

In that connection, I have had the pleasure of meeting from time to time with your Committee on Medical Education, and it has been obvious that there are many problems both with reference to preliminary educational requirements and professional educational requirements that this Committee has to consider and cannot dispose of adequately because they, too, are lacking the means to carry out their in-

vestigations or, in fact, even to meet, except on the train coming out from Chicago.

### Maintenance of Educational Standards

The third question was: Does membership in this Association imply that each of its constituent faculties, no matter how varied their curricula, is maintaining a professional educational standard adequate to prepare its graduates for the proper care of the sick?

I think that is probably the hardest question to answer. I am not sure that at the present time this body, or any other body, is prepared to answer it intelligently, but I think it is a question which will sooner or later have to be answered.

Dr. Weiskotten's studies a few years ago on the subsequent careers of medical students who have graduated from various medical schools throughout the country gave some hint of the answer.

### Graduate Medical Education

Another question which is related to this is the increasing importance of graduate medical education, with the training of competent specialists. There appears to be a very decided movement on foot in this country to certify or license medical specialists. I am not at all clear in my own mind as to the wisdom of such a movement, but I am clear in my mind as to the force of it. Very shortly, some competent body will have to undertake the responsibility for graduate education, for the training of specialists, and I believe that this Association is the most competent body to undertake studies in that field, to collect data and to lay down principles, just as you have done with reference to undergraduate medical education.

Very briefly, those are some of the things which your organization might and even should specifically undertake in order to meet the problem put up to you by the Federation of State Medical Boards.

### Data on Teaching Personnel

In addition to that, it appears to me there are many things which this Association might undertake which have no particular relation to these problems at all but which you could do for your own benefit. For instance, several of the deans of medical schools have informed me that it would be of great value to them if this Association would collect data with reference to all the men teaching in medical schools, information about their training, their special work, their research, and so forth, so that when, for example, a professor of physiology is needed in a hurry, by writing to this Association a dean can have before him a list of the possible available candidates so that he will not have to spend six

months or a year getting these data together before he begins to settle down to making a choice.

I think that is a service your Association might render to your constituent members with relatively little trouble and expense.

I have already spoken of your giving authoritative advice, based on first-hand knowledge, to the state boards in reference to the status of medical schools. In many states the state boards are required to admit graduates of reputable medical schools, and it has been very difficult to construe the word "reputable." I think this body would probably construe it more wisely and more intelligently than the individual state boards can, and I think the state boards should be able to come to you for such information.

### Status of Foreign Medical Schools

Another problem that confronts the state boards, particularly the New York Board, is the status of foreign medical schools, and sooner or later, I believe, either we will have to close down on all foreign graduates or require much more definite information about education in foreign medical schools. Some step in that direction has been taken by the Council on Medical Education of the American Medical Association but I believe the time is coming when a systematic study of the foreign medical schools will be necessary, and I suggest that it might be within the province of this Association to be responsible for such a study.

### The Intern Year

From time to time the problem of the intern year as part of the undergraduate training has been raised, and that is a moot problem that has not been settled and also might be studied further by this Association.

### Educational Experiments

Dr. Canby Robinson's paper on experiments of medical education is one which might serve as a very excellent guide for further studies over a larger number of experimenting schools, the result of which would certainly be of value to all the members.

### Financial Support of Committees

You have a certain number of active committees and these committees are made up of men who desire to do their work earnestly, but I have been informed by several of the committees that they are definitely hampered because they have no facilities for holding meetings except the night before the annual convention. Your committees, like the committees of every other association, must have some support in order to carry out their work.

## Needed Administrative Machinery

The last question that I asked was: Is this Association prepared not only to establish and maintain educational standards, but to create the necessary administrative machinery for the study and direction of this important work?

It would be highly improper for me to give the answer to that question which must, of course, come from this Association itself.

I should like to point out in passing, however, that the best available data I have at present on the annual budgets of American medical schools is approximately $20,000,000 a year, and that probably one-tenth of one per cent of this annual expenditure would be sufficient to carry on most, if not all, of the activities I have suggested.

Dean Darrach, in taking up these questions last night, suggested that at the present time the Association would have to answer "No" to them. I had the opportunity of re-reading Dean Darrach's paper carefully at breakfast, however, and from a careful study of it I am justified in expressing his belief, and certainly it is the belief of the state boards, that now is the time to change the answer to the affirmative.

## Discussion

DR. H. G. WEISKOTTEN, Syracuse University: I should like to read just a paragraph or two from the report of last year's Committee on Medical Education and Pedagogics of which I was Chairman.

"Inasmuch as the following resolution was adopted by the Federation of State Boards of Medical Examiners at its regular annual meeting in February, 1929:

" 'That in each state the Medical Practice Act and its administration conform as far as possible with the educational principles of the Association of American Medical Colleges; and

" 'Inasmuch as there have been adopted and incorporated in the By-laws of this Association certain clauses in reference to the admission of students to the medical colleges of the Association, and in reference to the curriculum of the medical course itself; and

" 'Inasmuch as it does not seem to have at the present time adequate organization to meet these responsibilities;

" 'It is recommended that the Executive Council of this Association consider the feasibility of setting up an administrative organization and executive force to carry out these responsibilities effectively'."

I was told at that time that it would be impossible for the Executive Council to take any action and that the providing of sufficient funds to meet these responsibilities even in part would require an amendment which must lay on the table for a year. It was for that reason that I introduced this amendment to increase the dues.

Any member of this Association who has served on an active committee certainly realizes how committee activities are handicapped by lack of funds

and by lack of a central administrative office to cooperate in connection with the activities of the committee.

Dean Darrach was perfectly correct in his statement in regard to the usual form of activities of the various committees. Last year our committee on the scholastic aptitude test was fortunate in that Dr. Zapffe personally secured a contribution of $500 to carry out the work.

I have heard a suggestion that really what this involves was simply a matter of increasing the salary of certain officers of this Association. Not at all. I feel it is a matter of the Association meeting responsibilities which definitely belong to it, and I do not see how we can meet those responsibilities without having more of the time of an executive secretary and without having a central office organization that can carry on the work.

I am not going to list activities which I feel this organization should carry on. Dr. Rypins has mentioned many of them, but I do feel that if we are going to function as the official organization of the medical colleges of this country we must have financial support to do it, and that is more than we have at the present time.

Dr. E. S. Ryerson, University of Toronto: I feel myself in a rather awkward predicament. I represent a university that is in a foreign country and still we are members of this Association, and we certainly appreciate the fact that we are members. We have had a great deal of benefit and are interested in the Association and the efforts it is putting forth to improve medical education.

The question of increasing the annual fee of the Association was laid before the president of the University and he was not in a position to give a final answer because he felt he had not sufficient material to lay before the Board of the University and be able to support it with sufficient arguments to warrant the increased expenditure which the increase in dues would make.

I think he had that feeling on account of the fact that we have relationships in our own country with our various licensing bodies. We have our own responsibilities with regard to medical education of graduates which has recently been furnished by the Royal College of Physicians of Canada and the Royal College of Surgeons of Canada in which we hope in the future to be able to assess the educational value of the various men going into the specialties.

We have so many responsibilities in our own country that an increased expenditure in connection with the development of this Association is hard to assess.

The question of our graduates coming to this country is, of course, one that is of particular interest to us in connection with this movement. If we could have our medical course guaranteed by this Association it would certainly save us a considerable amount with the various State Boards. On the other hand, there are many men in our country who would like to have some wall arranged between the two countries which would prevent our men getting out of Canada and they would stay in their own country.

In that way, according to instructions, I feel that we will have to oppose the introduction of this. I would hope in doing so, though, that some arrangement might be made whereby we can continue our membership because we certainly want to continue to benefit by the meetings of this Association.

Dr. S. Willis Prowse, University of Manitoba: I have feelings that are

pretty strong on this point, whether sufficiently well justified or not, to warrant me in saying a word at this stage of the proceedings.

There is practically nothing I can add to the remarks that have already been placed before you by Dr. Ryerson of Toronto. He has stated the position in which my own school finds itself, so I do not think it is necessary for me to take up very much more time.

The matter has not, however, been placed before the executive of our University, but I feel justified in saying that I can give you the tenor of the reply that will be made to any overtures to increase the fee for the medical schools. Should our inability to increase our expenditure in the matter of annual dues result in the severence of our school from this organization, it would be a matter of very deep regret, indeed, not only to myself but to my colleagues and to the president of our University. At the same time, our revenues are so small, and the quarters from which we can derive revenues are so restricted, that this extra $100 or $150 is a great consideration to us, and it comes to be a question of whether or not the value received is going to be commensurate with that consideration.

As to whether we can remain, we should like to do so. If such an arrangement could be made as Dr. Ryerson suggested, whether you call it associate membership or what not, I shall be very glad and so will our school, because we feel that in medical education, as in other spheres of science, we should recognize no international boundaries.

Dr. Irving S. Cutter, Northwestern University: If this Association is to proceed with any constructive program we should have larger funds. The Executive Council cannot plan without the money in sight, without an actual budget.

This might be assumed to be another way of putting it. Most of the schools of this Association have for several years been engaged in contributing something to the Commission on Medical Education. That period of five years has now elapsed. I am sure that a referendum to the several schools would elicit support for the program of this Association to do the things Dr. Rypins has outlined and, in addition, probably undertaking educational studies of real worth.

I think we ought to face the fact that many of the educational studies published by the Commission were made by this Association, conducted by its membership, the clerical work, however, having been paid for by the Commission. That is just taking money out of one pocket and putting it into another. The money was contributed by the members of this Association to the Commission and certain funds were repaid by the Commission to individual members of this Association for the purpose of those studies.

I feel more earnestly on the question of sound educational studies than I do on the mere establishment of an official clearing house for certain statistical data. I feel, however, that the two things must go jointly; that the clearing-house office would serve as the center from which these several studies might emanate, and that the gathering of data through a period of years would put this Association in a strategic position in advising or counteracting certain moves that might suddenly come before us.

Perhaps if the membership of the Association cannot see fit now to amend the By-laws to increase the dues, a letter might be sent to the constituent mem-

bership with the idea that certain contributions from the membership might be made which would approximately total what would be required.

A tentative budget as to what might be needed would approximate $20,000 a year. The increase in dues will fairly approximate the desired total.

Perhaps some schools could ill afford the $250 fee. I do not like the term "dues." I think, rather, it ought to be a real contribution from the University or the school for educational advancement, for which we are particularly created.

DR. EDWARD H. HUME, New York Postgraduate Medical School: Dr. Rypins has challenged us, as usual, with several searching inquiries, and one of these refers to the matter of training specialists. He asks whether this Association is going to be prepared to take up work in that direction.

In his remarks last night, Dr. Darrach raised the question Dr. Rypins previously put forth and spoke of the four bodies with which we are all familiar, that are considering educational problems. Others might have been mentioned, for instance, the College of Physicians in Philadelphia and the Academy of Medicine in New York.

Speaking about the latter body particularly, the Committee on Medical Education in the New York Academy of Medicine has set itself this same question that Dr. Rypins has asked of us, and I think this body here does well to face it.

We know, for instance, that the different boards, the gynecologists most recently, have set up a standard in their association by which men are going to be tested as to whether they fulfill the requirements for specialists. The otologists have already done it, and the rhinologists have already done it. Dr. Ebaugh gave us an indication this morning that a board was to bet set up in the realm of psychiatry.

This Association has a tremendous opportunity to study the requirements of these various boards and somehow to incorporate those various requirements into a more national system which will be used for the training of specialists. The Academy of Medicine in New York is, in its own realm, making such a study and is trying, with the help of the hospitals in New York, to consider how specialists may be trained there. This is a matter that requires the cooperation of the universities, the use of a good many extramural hospitals and, above all, it requires that this Association detail the matter of the training of specialists to some special group.

I do not see how that work can be done without the provision of extra funds. Whether it be done by extra dues as has been suggested or by the special contributors' methods is a matter that requires debate here. At any rate, the particular field I have spoken of, the training of specialists, is one in which this Association should exercise a very important guiding influence.

DR. B. C. H. HARVEY, University of Chicago: There is one thing I want to say perhaps a little more than anybody else who is here wants to say it, though I am sure we all feel it, and that is we would regret very deeply any action by this Association that would separate us from our Canadian colleagues. I want especially to say that, because I was on the faculty of a Canadian university many years ago, and for thirty years have been on the faculty of a medical school in this country, and because of this experience I feel perhaps more acutely than most the desire to preserve our cordial relations.

Medical schools and universities constitute a peculiarly effective bond which unites these two countries and all the countries of the world. Science knows little of political boundaries. Medicine goes across them all and carries with it the spirit of cooperation and of concord, particularly, I hope, across the imaginary boundary that exists between two peoples of the same kind, with the same spirit, two peoples who can cooperate more sympathetically and completely than perhaps any other two adjoining peoples anywhere in the world.

There is one other feature of this proposition that has been made and of which Dr. Rypins has spoken that I should like to mention. One very important and valuable thing in this Association has been the spirit of it, the family spirit of it. We have been a happy family, and we come together with a family consciousness knowing that in the family we can bring up our problems for discussion freely, and that we will get sympathetic and friendly, sometimes critical consideration of them. This is all inside the family. It is all of the greatest benefit to each of us. We appreciate the privilege of bringing before the Association questions that are still questions in our minds which we would like to have talked over so as to secure the advice and criticism of our fellows.

We want to continue to do it, and it would not be wise for the Association to take any action which would interfere with the perfect freedom of these discussions, untrammeled by any considerations of legal action to be taken on the basis of our discussions or reports. We are a voluntary association; we consider and advise. In that spirit the Association has been and can always be of the greatest value to each of its members.

This proposition that the Association take over definite authority (that was the word used by Dr. Rypins on behalf of the State Boards), in connection with some of the obligations of the State Boards, this seems to me to threaten the happiness of our family life and the possibility of carrying on among ourselves these discussions, in the freedom of which lies their greatest value.

I do not think we ought to try to take over the power and responsibilities of the State Boards. We must appreciate the confidence which Dr. Rypins in particular and the State Boards in general have placed in us. I know we all are glad to have Dr. Rypins with us and we appreciate very much this evidence of his confidence which comes in the proposition on the part of the Federation of State Medical Boards to confer on this Association the power and the responsibility which the State Boards have. We appreciate it, but we cannot take it; no matter how much we might be willing to take it, we cannot.

The State Boards have been given by the individual states power and responsibility concerning the licensure of medical practitioners: that involves an evaluation of the training and education of the applicants for licensure. Whatever we do or whatever anybody else does, that power and responsibility will continue to lie right there in the State Boards, and they cannot confer it. They may ask for help, and we might give information; we would be happy to help them in any way we can. We cannot take either the power or the responsibility. They will have to keep it. If we try to take it we will be in an untenable position. In any particular case that came up, any lawyer who was a lawyer would make the Association look absolutely ridiculous.

In the second place, it would not be in very good taste to do it. An Association that inspects itself cheerfully and publishes to outsiders the results of

this inspection is endangering the future happiness of the members of that Association. If we were to do that we would spoil our family life.

I am afraid of it. I am afraid the thing which we value most, and which I am sure can be the most valuable to the Association, will be hurt, and that is our freedom from any legal entanglement, any legal responsibility whatsoever.

There are other organizations which have been given power and responsibility by the States which we would have to consider if we proposed taking over, at the request of the State Boards, any such authority or power as is suggested. These are the Basic Science Boards. These organizations have their own power and responsibility and will have to exercise them no matter what we do.

There is one other consideration. The Federation of State Boards has honored us, and we appreciate the honor, by asking us to take over authority in this matter. We might advise them we can not take authority, but they might ask reports from the Council on Education of the American Medical Association which has made inspections of all colleges, and which will continue and must continue to make inspections of all colleges if it is to do its work effectively, and they do it at their own expense.

We appreciate the honor given as by the Federation of State Boards in asking us to handle this matter, and take over their authority, but we look a little askance at the proposition which comes with it that we take over, along with the authority, all expense and trouble thereto appertaining. We are very uncertain about the responsibility, but if the State Boards could manage to add to their proposition the statement that they will meet all expense involved, that might be a nicer proposition on the part of the Federation of State Boards. We might look at it a little more sympathetically even though we could not decide to accept the proposition even with that addition.

They might ask the Council on Medical Education to inspect these colleges. That Council will continue to inspect them, whatever we do, and their reports will be available to the State Boards. I think that might be more useful to the State Boards because they would be the reports of an inspection made by an outside, independent body, instead of the reports of inspection of ourselves made by ourselves.

Dr. Rypins says that this action would enable the Association to make inspections when desirable, as in the instance he mentions. We have now a provision for inspection under certain circumstances. In the first place, our Constitution provides that any college applying for membership shall be inspected by our Executive Council and report made to us. We never hand the report over to any outside people who might use it so as to make trouble for us. That report is our affair. If outsiders want to steal it or look at it, all right, but we are not handing it to anyone.

The second condition under which our Executive Council must make inspections is: If any other evaluating organization makes a report discrediting one of our members, then they must make an inspection of the college involved.

The third condition mentioned in the provision of the Constitution for inspection of colleges requires simply the request of any member college. This

covers fully the case which Dr. Rypins has brought up. Under it we can take action without any change in the Constitution.

Upon the simple request of any member the Executive Council may, according to the Constitution, make an investigation and report. That would seem to be a good and perfectly feasible way to get a report in the particular instance mentioned.

For all these reasons, it would seem to me unwise for us to assess ourselves each $150 a year for the purpose of taking over troubles which do not belong to us, and which would embarrass us.

DR. FRED C. ZAPFFE, Secretary-Treasurer: I want to remind Dr. Harvey that this Association not only inspects colleges making application for membership but it also each year inspects some of the colleges in membership. Naturally, that sort of inspection has been extremely curtailed by lack of sufficient funds. If it were not, Mississippi would have been inspected before it got into trouble.

Furthermore, of the many colleges that have been inspected, either because of trouble or not, this Association has never made public the inspection report on any college. It is read to the Executive Council for action or not as that body deems best.

One other point bearing on Dr. Harvey's remarks: There is already a very great division of responsibility and authority. Some might be inclined to regard it as an attempt to shirk responsibility. Not so, however. It is an endeavor to place it where it belongs.

I have on several occasions told you about a letter received from the Council on Medical Education throwing responsibility onto this Association, a responsibility in which formerly the Council on Medical Education took a large part.

Dr. Colwell wrote to me in regard to a certain matter referred to the Council with respect to the extent of instruction given in medical schools on the subject of medical ethics. Dr. Colwell transmitted the letter to this Association and said: "This is being forwarded to you inasmuch as the matter of revisions of the medical curriculum have been left by the Council to the College Association in the belief that they are in better position to give it the proper consideration."

I read this into the record now so that you will remember it, because on this occasion you will probably remember these points much more easily than you would at any other time.

Inasmuch as Dr. Harvey also made some reference to state boards not being empowered to accept classifications or work done by other organizations. For many years twenty-two state boards had written into their laws that the rules and regulations of the Association of American Colleges were to be their guiding star. The California Board still has a regulation which makes it necessary for an applicant who came from medical schools between certain year periods to have the endorsement of this Association on his application for reciprocal registration in California, or for licensure, to the effect that he came from a school which at the time of graduation complied with the rules and regulations of this Association.

DR. DAVID A. STRICKLER, Denver, Colorado: I thought the Federation acted wisely in deciding to accept graduates of colleges in affiliation with your

Association to examination by its various boards without further requirements as to educational qualifications. This action was taken since I last attended the Federation meetings but I had thought for some time that your Association was in better position to know what should be taught and the best manner of its teaching than the medical examining boards and that the state boards could well admit your graduates to examination and further that they should license on credentials those who have passed another board of recognized standard.

There are many sides to this question as I see it after listening to the discussion that has taken place here, but it seems to me there is a mistaken idea with relation to what Dr. Rypins has in mind, and certainly to what I have always had in mind, that we are shifting the responsibilities of the Boards onto you in such a way that you are having burdens added.

We are simply accepting your evaluation of your students. At such time as you may act in a way that the Boards feel they may not longer so accept, they can take back by individual action the determination of those qualifications.

In this connection, those who have certificates from the National Board of Medical Examiners are accepted, so far as their educational qualifications are concerned, by a very large number of Boards, and it seems to me we are simply placing you much in the same position that we place those who hold certificates from the National Board.

Dr. B. D. Myers, Indiana University: I was very glad to hear Dr. Harvey voice so well, and in a manner I am sure won the hearty approval of all of you, the kindly feeling we have toward the schools across the border, and the pleasure it is to us to have representatives of those schools with us annually.

I would feel very grieved if affirmative action on the question which is before us here today, that of raising dues to $250.00, should result in these schools failing to continue membership with us, but I feel this problem can be safely entrusted to the future for solution, as suggested by our friend from Winnipeg along the line of an associate membership or possibly through a reconsideration of the matter by their own faculties. I feel that by all means this fine relationship should continue.

Think of the situation, gentlemen, presented by Dr. Rypins. Dr. Rypins tells us that we are directors of a great educational activity with a budget of approximately $20,000,000 per annum, but here we talk and hesitate about a measly little one-tenth of one per cent of this budget, the raising of which will enable us to do some of the things collectively which we could not do individually. Is it not worth this paltry sum to be able to go ahead and make studies that will be of benefit to all of us?

Are there medical schools within the States with budgets that would meet this increase in annual dues with difficulty? Certainly those schools are the ones that will profit most by these studies, and so they can best afford this little addition to annual fee.

Dr. Harvey spoke of the danger of taking over the responsibility of fixing educational standards. The real danger lies in that some agency, such as State Boards, might take over the responsibility of fixing educational standards and make requirements so hard and fast that no opportunity for experimentation or variation is left us. Take the variation we have provided for in our constitution, whereby an individual who does not have the biological requirement

but who does have 90 semester hours or more of collegiate work including sociology or psychology, may substitute sociology or psychology for the biological requirement. Every year this exception to our rule saves some men, often college graduates, the necessity of taking an extra preparatory year. Such liberty would not be open to us if our State Boards fixed hard and fast standards.

The state boards are asking us to assume a leadership which rightfully belongs to us in the matter of fixation of standards. They are asking us to assume a relationship which has existed for many years between the Indiana State Board and the Indiana University School of Medicine, a relationship which has worked perfectly with us, and I cannot believe it will work in any other way in the general application which is proposed.

Are we in danger of legal procedure because we may say that a certain school that has been a member of our Association no longer maintains the standards that render them worthy of membership? We have plenty of precedent in other associations for such action. The Association of American Universities drops colleges from membership. Do the colleges so dropped institute legal proceedings? They immediately inaugurate those reformations which are necessary to put them back in reputable membership again. I cannot believe that anything other than that will happen if the Association of American Medical Colleges becomes in actuality what it is now nominally, the agency for determining minimum premedical requirements.

I have been attending these meetings for many years. We have done certain things less effectively than we should have because of limited income. We have contributed to studies carried on by other agencies, which we might better have carried on ourselves. We have failed to assume the full obligations of this Association because of lack of funds. I trust the time has come when we may move forward with a budget that will enable us to do the things that are really our obligation to do.

Dr. J. C. Simpson, McGill University: I am glad of the opportunity of saying just one word, particularly in reply to the topic introduced by Dr. Harvey. I am quite certain that I speak for not only our own school but for the other Canadian schools that are represented here when I say that nothing along these lines that this Association does is going to separate the Canadian schools from the American schools.

It happens that the school I represent is prepared to meet the increase in fees, if the proposal meets with the approval of this Association. The university authorities of some schools in this country may have to be educated up to the proposal and probably some education will have to be done with the university authorities in our own country, Canada.

I feel that, in spite of the difficulties in arranging details, I must express approval of the scheme because it is along the lines that do seem to be pointing in the right direction. It is, it seems to me, throwing the burden—and burden it may be—on the shoulders best fitted to carry it. Even though at the present moment we may not feel that the Association can assume the burden adequately, I think that, if it is right, our shoulders will grow in strength to assume the burden.

Dr. Louis B. Wilson, University of Minnesota: I should like to say a word concerning one phase of the subject which has been mentioned here, that is,

the possibility of this organization taking more advanced and more definite action concerning graduate medical education.

At the meeting in New York last year we had one joint session with the Association of American Universities. Their problems concern entirely graduate work. Many of the questions which were brought out in the meeting yesterday are problems which the Association of American Universities has been discussing for a long time, and some of which they have solved, I believe, in a very reasonable manner.

It seems to me that if graduate medical education, the preparation of men for advanced work in special fields of medical practice or medical sciences, is to be taken up at all, this body is the proper body to take it up. It should not be left to various specialty organizations themselves. But I would add that I think this body would gain much by close association with the Association of American Universities in the study of graduate problems. Certainly such has been our experience at the University of Minnesota, and I feel quite sure that other universities and medical schools would find equal assistance from the counsel and advice of the Association of American Universities.

Yet today, despite the fact that last year we had a joint session, I think each organization has almost no realization of what the other is doing.

I do hope, sir, in any plan which may be developed looking toward the further development of graduate medical education in this country, that the counsel and advice of the Association of American Universities will be sought and accepted by this organization.

DR. FRED C. ZAPFFE, Secretary-Treasurer: I will read now a letter I received from Dr. Wilbur, which I feel, is not betraying a confidence. He says:

"My dear Dr. Zapffe: I am very anxious to be recorded in favor of the Association taking on educational responsibility for the training of physicians so that we can free our medical graduates from the exuberance of technical legal requirement which is so hampering and so hard to change.

"It seems to me we have gone far enough in the development of education to be trusted to train our men properly and to certify them to the various states without being required to meet curricula devised in any given period by legislators."

Dr. Wilbur has taken a very great interest in the discussion of the problem that is before us this morning. He was repeatedly importuned by some of us to see whether money could not be made available from some outside source to help the Association work out some of its projects, and he has been most emphatic, as some of you may remember, that this Association, in order to maintain its standing and its dignity and its importance in the field of medical education, should finance itself.

That question came up when our JOURNAL was established. You will recall that the one thing that prevented us from publishing a journal was the lack of finances. We had dues of $50 a year. Dr. Wilbur was approached to see whether he could make it possible to get outside support to publish what was considered a very important publication and he stated quite emphatically then that he was utterly opposed to it and suggested it would be more preferable to raise the dues to make it possible to publish such a journal. The result was that in 1925 the dues were raised from $50 to $100 to permit of the publication of the JOURNAL. So we have a precedent for raising the dues for a specific purpose.

# Relative Value of Cultural Courses in Premedical Training*

EDWARD S. THORPE, JR.
Assistant Dean, University of Pennsylvania School of Medicine

During the past five years many forces, both silent and audible, have been operating to remove the control of medical education from the hands of the organized medical profession and to place it once more at the disposal of trained medical educators.

Twenty years ago medical education needed thorough house-cleaning. At that time, since the educational authorities themselves were unable or unwilling to accomplish this, the American Medical Association, acting through its Council on Medical Education and representing the profession at large, used the vacuum cleaner, the insect exterminator and the wash tub, and the schools for training its neophytes were refurbished.

Twenty years have passed. Educational methods along all lines have progressed. Medical educators have become more and more conscious of the rigid restrictions which have hampered their plans and theories for modernization of the curriculum. The day is dawning, apparently, when we, as educators, will be free to conduct soundly conceived experiments with the newer methods.

For the past few years several teachers of the preclinical sciences have come before this assembly sounding grave warnings as to the meager knowledge of science possessed by the students we have selected for them to teach, and advancing pleas for increasing the amount of premedical science training. Apparently, these men have worthy plans laid against the time when educators will control the curriculum. As I have listened to their papers, I have been struck by the fact that their desires are far from modest. One gathers that the future student of their dreams would combine in himself the chemistry of a Theodore Richards, the physics of a Milliken, the biology of a Jordan, and the mathematics of an Einstein.

Furthermore, each year we have listened to the statistics gathered by Dean Myers. And so, in addition, our prospective medical student must have the persistence in seeking admission of that worthy Jacob who wooed his Rachel for seven long years.

Only occasionally during this period, when we have been advised to add course after course to our science requirements, has there been one who would rise up and cry out: Quo vadimus!

*Read at the Forty-first Annual Meeting of the Association of American Medical Colleges, held in Denver, Oct. 14-16, 1930.

### Effect of Science Training on Medical Students' Work

Before we take any steps to increase our science requirements or indeed modify these requirements at all, it might be well to stop and observe what effect—if any—the present training has in influencing the quality of work done by our medical students.

If more courses in chemistry, biology and physics are needed to prepare students for the medical curricula of the present and future, what effect has maximum preparation had on students in the past? Have they experienced greater success in the medical school?

Like the writer of any paper, I have an axe to grind. I must confess that I started this study with a major premise. I have felt that a good student in college will usually turn out to be a good student in medical school and later be a good physician, regardless of the exact type or content of his preparation.

And as a corollary to this, I have noted with some misgivings the depreciation in that abstract quality called culture in the average applicant for medical training. My colleagues in the clinical branches are forever berating me concerning the frightful penmanship, the infantile spelling, and the clumsy use of our language displayed by so many of our students.

But, of course, all of my audience are familiar with this pleasant pastime of upbraiding the Dean's Office for the shortcomings of students, no matter how carefully selected.

When one interviews hundreds of these applicants year by year, one cannot help but be amazed by the naiveté with which they try to impress one with the total number of their "units" in chemistry, biology and physics. One or two questions reveal the fact that they have no conception of the relation of these sciences to the general scheme of knowledge.

And, furthermore, most of them have but a slight acquaintanceship with the masterpieces of literature in our language, let alone in other languages. They have merely taken three units in French or German.

When asked to write reports they cannot compose paragraphs with any facility; they cannot express themselves logically. They know nothing of history, philosophy, economics, or sociology. And yet, at the end of the first year in medicine, many of them receive the collegiate arts degree "in absentia." This term probably refers to the absence of knowledge as well as of the student at the exercises of graduation.

### Results of Analysis of Entrance Credentials

With this in mind, the credentials presented for entrance to our School of Medicine during the past five years by actually enrolled stu-

dents were analyzed. The aggregate number of semester hours of chemistry, biology, physics and mathematics taken by each one was compared with the total number of hours in all subjects.

The figures suggested that our students could be divided roughly into three groups according to the amount of science preparation: Group A,—those who had elected science courses in excess of 50 per cent of their total credits; Group B,—those who had taken from 35 to 49 per cent of their work in science; and Group C,—those who had taken from 20 to 34 per cent of their credits in science.

The requirements of this Association are such that it is impossible to fulfill them even in a four-year college course unless 20 per cent of the credits are in science.

We all admit that grades, as such, are poor estimates of a man's real ability and knowledge, yet, in such a study as this, one can use no other yardstick to measure achievement. Therefore, the general averages obtained by these men at the end of the first year in medicine and grand averages for four years were used to determine the effects of preparation upon the ability to master the subjects of a medical curriculum.

Table 1 will show the summary of the facts.

**Table 1**

Number of Students graduating from 1926 to 1930: 664.
Students having 50 per cent or more of credits in Science, Group A, 233
Students having 35 to 49 per cent of credits in Science, Group B, 288
Students having 20 to 34 per cent of credits in Science, Group C, 143

**Table 2**

Distribution of students in upper quarter of classes from 1926 to 1930. Total number, 150; average, 30 per year.

| | | |
|---|---|---|
| Group A | 49 or | 21 per cent of 233 |
| Group B | 49 or | 17 per cent of 288 |
| Group C | 52 or | 36 per cent of 143 |

**Table 3**

Distribution of students in upper 10 men of First Year Classes from 1926 to 1930, total 50.

| | |
|---|---|
| Group A | 17 |
| Group B | 15 |
| Group C | 18 |

Several interesting cases came to light in the course of the study. In the past five years, we have admitted four men who had previously studied for the professions of chemical engineer or agricultural engineer. These men presented from 102 to 126 semester hours in

science out of a possible 140 to 145 hours. Only one man in this group distinguished himself in either the first year or during the four years, holding fifth place in his class, whereas the others held sixty-first, eighty-third, and seventy-eighth places respectively. One girl presented 90 hours of science which she had accumulated in a college course of 135 hours. Her class position was No. 124. One man presented 90 hours out of a possible 141 hours but stood No. 101 in his class. One man who had received the bachelor's degree and later the master's degree in chemistry accumulated 96 hours of science credits and achieved fourth place in his class.

On the other hand, two men presented 22 per cent of their credits in science—this being the minimum for entrance to our School. One man led his class in the first year with an average of 92.1 per cent and was third at the end of four years. The other man averaged 88 per cent in his First Year and was fourth in his class at graduation.

### Selection of Students

Of course, many factors modify these results in the case of different individuals. We select our entering class each year from over one thousand applicants representing about 130 colleges. Our class when selected is usually a composite of about forty-five colleges. Efforts are made to select the best men and women but character is considered to be of greater importance than mere grades. Our experience in the past with the students of some colleges tend to modify our decisions. But all will agree that the quality of preparation varies even among the best known colleges and universities. Another variable of lesser importance is whether the student attends college for three or four years. Another factor is the home environment of the student which may influence his choice of college work markedly. Still another variable is the amount of outside work which some boys are compelled to perform in order to earn money for their education.

### Preparation of Superior Students

I was interested to find out what had been the preparation of superior students. There have been four students in our School in the past twenty years who might be so classified since they achieved general averages in four years of 93 per cent or better; in fact, two of them graduated with averages over 95 per cent.

Two of these superior students received more or less classical educations and elected scarcely 25 per cent of their credits in science. One man presented 31 per cent science credits and another 52 per cent.

The only reliable conclusion that one can make after a study of these data is that it is not necessary for the good student to prepare himself

for a career in medicine by electing an inordinate amount of chemistry, biology and physics in college.

There will be some who will contend that these data prove nothing. Perhaps that is true. If so, we must still agree that the premedical preparation has little effect on the students' success while in medical school. Some will argue that the 35 to 49 per cent group should be combined with one or the other group and thus compare the results of two groups only. We can all remember the acrimonious debate concerning another middle group as the results of the prohibition poll were announced.

However, I must contend that these data will fortify many of us in our belief that the colleges should not be used as prevocational schools. Isaac Sharpless, that beloved and revered president of Haverford College, once remarked in a morning assembly "the purpose of a college is to show a man how he can spend his leisure time profitably."

This, I believe, is the function of a college education. It prepares a man for a position in cultured society and not for a specialized profession.

### The Cultured Physician

From earliest times the physician has held a high position in society. He has maintained this status because he was usually a man of broad learning. Are we not running the risk of turning out men who will be mere scientific robots? Are we not even now turning out men who split infinitives with the same sang froid as they split the right rectus muscle to remove an inflamed vermiform appendix? And later remark to a colleague, "Well, he had an acute belly and I cut him for an appendix." One is forced to recall that Dick Steele wrote in the *Spectator* "A gentleman who speaks coarsely has dressed himself clean to no purpose."

Are we not graduating men who can speak glibly—though ungrammatically—of the *p*H of the gastric juice and chemical processes of digestion but who cause their dinner table partners in polite society to have mental indigestion because of their lack of broad culture?

Before we demand that all our applicants prepare themselves for a narrow life of research in physiological chemistry or biophysics, let us stop and remember that 98 per cent of them will practice medicine—the Art as well as the Science.

Let us, therefore, demand merely that our students come to us really knowing the fundamental principles of science and the relation of science to other branches of knowledge.

Let us not require science in terms of semester hours but science

in terms of actual knowledge. Let us advise young men to ground themselves in the principles of science and to acquire, if possible, a taste for history, philosophy, literature and art so that they may look forward to the fulsome years of middle age and truly say with the poet, "Forsan et haec olim meminesse juvabit."

## Cultural Value of the Medical Curriculum*

E. P. Lyon
Dean, University of Minnesota Medical School

It was my fortune within recent months to attend a very formidable and formal, not to say ponderous, university convocation. The procession was very long and the amount of black cloth in the gowns there presented would have made mourning raiment for an immense body of widows. The hoods of that procession, if turned around, would have furnished suitable attire for a generation of debutantes.

At that meeting, some two or three hours were spent in the presentation of governors, mayors, foreign guests, who in turn made complimentary remarks and presented short speeches in some half dozen different languages. Finally, just as the evening sun was slanting across the auditorium and everybody was very tired and very hungry,—except the president who would never be tired or hungry under those conditions (laughter),—Dr. Henry Suzzallo was called on to deliver the principal address on education in a democracy. Dr. Suzzallo arose and made some complimentary remarks fitted to the occasion and said that in the language of Congress he begged "permission to print."

My paper does not come at the very end of our program, although fairly close to it. It does not come at the beginning so I could say I was giving up my time for the benefit of those who come after. Nevertheless, circumstances constrain me to ask not only permission to print but also permission to write, because not a word of this paper has been put down, and I don't know what I shall write when, and if I finally do write. (Laughter).

I am only hoping that the discussion will be varied and deep, and that from the discussion here I may write a very good paper, which may be embalmed and put into the archieves of this Association. (Laughter).

I do not know why I yielded to Dr. Zapffe's solicitation that I

*Read at the Forty-first Annual Meeting of the Association of American Medical Colleges, held in Denver, Oct. 14-16, 1930.

should speak on this subject. Probably it was in accord with that old, old maxim that Ph.D.'s rush in where M.D.'s fear to tread. (Laughter). At any rate, I know Dr. Zapffe failed to tell me what culture is and that I have failed to find out. Many a night have I spent in thinking about the subject, in roaming the streets among the homes of the cultured and refined, wondering what was going on behind the walls.

I asked one of my colleagues what a cultured man is. He said, "A cultured man is a gentleman who does not use his fingers in blowing his nose." (Laughter). I asked another one, "What is a cultured man?" and he said, "A cultured man is a gentleman who does not carry his nasal secretions in his pocket." (Laughter). Now, there is diversity of definitions for you, and I could not help but think of the statement attributed to Eugene Field to the effect that if Chicago ever takes up culture, Chicago will make culture hum. (Laughter). I thought if medical educators ever take up culture, they will surely make it howl. (Laughter).

Then I tried to think, if you can not define it, what are the characteristics of those who in the largest degree in our estimation exhibit that indefinable something which we call culture? What is it that characterizes those great examples, Osler, Weir Mitchell and Holmes, to speak of three only of our Americans, and characterizes perhaps in larger degree the great Englishmen of medical literature, and Cambridge and Oxford men whom we meet?

Well, it appears to me, first, that culture is broad. It is opposed, therefore, to all narrow tendencies. To that extent, culture is the antithesis of specialism, of research, of scholarship in the sense of going to the bottom of something. Culture is broad; to the extent that our medical curriculum is narrowing, it is anticultural.

Culture is characterized by a catholicity of viewpoint, it is characterized by a universality of interest, by an internationalism of spirit. Culture is expansive, not limited; it ranges, it not confined. Finally, it is tolerant; and tolerance means sympathy. The essence of culture is a broad sympathy. Can you see it better than in that beautiful character who addressed us night before last, Dr. Sewall? Can you see it better than in the addresses of Osler who ranges the universe, you might say, in his examples, illustrations and figures of speech?

If culture is something, then two or three things can be said about it, and I want to hitch these remarks to two texts. One of these I gathered from a book by Judge Lindsay, "The trouble with this age of enlightenment and culture is that there is too little enlightenment and too little culture." Why should this be true in a land of universal

education, in a land where there are a million college students, a very large proportion of college trained men?

The answer, it seems to me, is in the other text which I gathered from our meeting last year, when President Lowell said, "No amount of rain will wet paraffin, but calcium chloride will gather moisture of its own accord." In other words, whatever culture may be, and, of course, it is more than habits or social amenities, it seems to me it is inborn, congenital, hereditary.

This catholicity of interest does not seem to me to be, in a large degree, capable of being cultivated. I think that is the answer to Judge Lindsay's criticism that there is too little culture and too little enlightenment.

If that is so, it seems to me that the cultured man is bound to come out of almost any walk of life, and that he will seek the broad experiences which give him culture, which result in culture; and it seems to me that the medical curriculum is one of the avenues through which he will get this experience. This must be true, because the profession of medicine exhibits many, many examples of the highest culture.

If there is another remark I may make, it is that culture reflects the life of the age. What is one of the most marked characteristics of this age? It is science and its applications. I quite agree with Dr. Sewall in reflecting Huxley's ideas that science is quite as cultural as the so-called cultural branches of the arts college curriculum. The man who has the native capacity for culture will be cultured. That man probably need not fear for his English. That man is probably shown here in Class C of Dr. Thorpe's groups, at least there are many of him within that group. They showed their breadth of interest by the very selection of premedical studies which they made.

When I consider further, I opine that the medical student capable of culture is stimulated to it by at least some of his professors. Many of our medical teachers are characterized by catholicity of outlook, broad interests, wide reading, fine thoughts, generous feeling, wholesome and sympathetic humanity. Why, just look at the deans sitting about here! Even they show some traces of culture.

Further, I opine that the medical student capable of culture is influenced by whatever material surroundings are fine and uplifting while he is attending school. The good buildings our medical schools are beginning to have, the beautiful campuses where some are located, the general lectures, entertainments, concerts which universities provide or large cities make possible—while these leave the ordinary man unaffected

or rather he stays away from them unaffected, I opine they leave deep impressions on some of our students.

I see a few medical students at symphony concerts. I remember some years ago, one who ushered at these concerts. Now he is a successful physician in St. Paul and interested in all arts and in civic affairs. Libraries, art galleries, the drama doubtless attract the medical student who has a capacity for culture and leave their mark upon him.

If sympathy in its broadest sense is a characteristic of culture, then contact with sick people, which the student begins to get in his Junior year and continues throughout life, must inculcate many of the features of culture.

Culture does not come through any one avenue. I have heard from those familiar with the history of education, that Greek, which in our time was called a cultural subject, was introduced into the universities against those who were the disciples of so-called culture in the Middle Ages, as a tool at the time of the Renaissance. It was introduced as a key to an unknown literature and not in itself as a cultural subject. Then down through the centuries some way it assumed that position.

I am so deeply impressed with the fact that culture is something built on a hereditary foundation, on a temperament, on a broad interest, and so on, that I give very little attention to the avenues through which the man goes to get it. He will get it, I feel certain, if he has the inner urge. It is something far different from the outside coverings, the amenities of life, the ability to choose the right necktie, and so on. It is deeper than habit. It is built on a curiosity and fine feeling which are innate in the individual. It does not matter much through what avenue he pursues it nor to what profession he aims. He will get features of it no matter what his curriculum, and the medical curriculum through its basis on sciences, in an age of science, through the superior men of its faculties, through its environmental opportunities and through its enforced contact with the human individual where sympathy and tolerance are fundamental, must contribute to the culture of those who pursue it.

### Discussion on Papers of Drs. Thorpe and Lyon

DR. J. C. SIMPSON, McGill University: All of us must, if we look back in our experience, agree with Dr. Lyon that there are many avenues to culture, and whether the best avenue lies along the humanistic studies rather than the scientific studies is a question that is hardly worth worrying about very much.

I am sure we all have known men whose academic training has been purely scientific, who have in a marked degree shown evidence of that vague thing we call culture.

It seems to me that the danger at the present time lies in trying to force

on our medical students the choice of one avenue. The important thing is to leave open the choice of avenues.

One always thinks in terms of one's own experience, and we in the Province of Quebec have, perhaps, unwittingly been trying an experiment along that line, and at last, out of the actions of our Provincial licensing board in Quebec some good is coming. We have as the avenue to the study of medicine in Quebec just one hard and fast rule that was laid down long ago by our French Canadian confreres, and that is that the student should possess an A.B. or B.S. degree. At first, it was an A.B. Of course, there are other avenues which, perhaps, are not of such high standard, but the ideal is an A.B. degree. If a man has an A.B. degree, it does not matter whether he has had any science at all. He can, as far as the licensing board is concerned, go on with the study of medicine and get their license later.

That, of course, has allowed us with certain selected students to try some experiments, and as I look back over the cases of those students I can not remember a single instance where a student was allowed in with a very minimum or perhaps what you would call less than a minimum of science who has not made good. It is not because that student has had little science, but because he was well trained.

In colleges of arts in Canada a student cannot get an A.B. degree after having pursued a great many courses that are unrelated. We have required continuation courses, and a student must study at least two subjects for at least three years of his four years' training.

When I look back over our graduating classes for the last five years or more, perhaps four or five students stand out as being exceptional, and of those four or five students only one has had a B.S. training. The others have been arts trained. One man majored in economics, another in classics, and another in history.

There is just one other bit of experience I would like to give you. It was my privilege many years ago to teach in the biological laboratory in the University of Cambridge for a couple of years after having taught for a short time in Canada. The one thing that struck me more than anything else in regard to that matter was that in that class in biology there were approximately 100 students. They were all selected students. They were all going in for honors classes. One-third had had classical training, no science training. Approximately another third had had mathematical training. The last third had had previous science training. For the first month or month and a half, the men who had science in school did find their way about better than the others, but at the end of the first term, and particularly at the end of the session, one could not detect any difference between the men. As a matter of fact, the first three men who topped the class were those who had had work under a group of classically trained men, and the next seven were from the mathematically trained men.

The lesson I learned from that was this: It is not so much the subject that forms the curriculum as it is the way in which that subject is used to give mental training, and that after all no matter what instrument is used, if a man gets good mental training, that is going to show up whether he goes into science or into the humanistic studies.

Dr. F. G. Novy, University of Michigan: I have listened with a great

deal of interest to the question put before the Association, and I can not help but quite agree with the last speaker with regard to what you call the cultural value in training.

My earliest experience was in the days when students were admitted from high school. Nowadays we admit them with 90 hours, or four years, and some of them are postgraduates. I have often thought of the good days when students came perfectly fresh from the high school, with an eagerness for knowledge that had not been rubbed down by subsequent work. They were the ones who gave the most enthusiastic attention to the work. We still have, of course, students who work enthusiastically, but there is something that you can not put your finger on that has been rubbed off, as it were, because they have been initiated into science, and consequently they feel that grades are the most important things they can come across.

I believe that something of this that has been referred to as vaguely undefined culture is a very desirable thing, and certainly Dr. Lyon has put his finger more or less on the proposition when he said that the broadness of training had a great deal to do with it. We all feel that by broadness we do not mean that a man should take a couple of hours of this and a couple of hours of that and scatter through the whole curriculum with his ninety hours or one hundred twenty hours. It means something else, something perhaps that is inherent in the individual. If he has back of him a desire, a real burning desire, to get somewhere, to master the subject that is before him, that man is going to profit by that drill and eventually when he comes into medicine he will apply those traits.

The individual who rides, takes it easy, naturally can go through the same courses exactly and be an utter failure when it comes to the final work in medicine.

Dr. Thorpe's statistics are extremely interesting to me. For instance, the C group, men who have relatively little preparation in science, yet can accomplish things, fits in with the notion I explained in the beginning that those who have not had too many corners rubbed off are the ones who can actually take hold and carry on.

Dr. B. D. Myers, Indiana University: I have evidence in my possession that very many of this body are cultured gentlemen, for the reports I got back on matriculation in your schools this year certainly deal in fiction and romance. (Laughter). One of those reports said "last year we had 1,000 students and this year we have so many." I referred to the official statement of last year and found instead of 1,000 the number was 356.

On every campus we have a group of defenders of the faith that there are certain cultural subjects, and the sciences are never included in that group of subjects by those gentlemen.

I have thought of this particular matter along this line: History, it is very generally agreed, is one of the cultural subjects. Well, is there any group of college students who know more important history than that group of doctors of medicine who know the history of their profession? Is there any better cross section of society than is shown in the history of medicine or in the history of nursing?

Psychology is accepted as one of the cultural subjects. Every doctor of

medicine must become something of a psychologist, either directly by taking formal courses or as a result of his practice.

Sociology is one of those cultural subjects. Is there any group of men who are more practical sociologists than the doctors of medicine?

Latin and Greek are among the so-called cultural subjects. Is there any group of men who can use those languages more freely in cracking open words of foreign derivation than the doctors of medicine?

Philosophy is one of those cultural subjects. Is there any group of men who become more truly philosophers than the real progressive doctors of medicine?

Biography is one of the cultural subjects, and as the gentleman who spoke last has said, is there any finer type of biography than that that you get in a biography like that of Louis Pasteur, and many of the other great leaders in our field of science? Some of the honest-to-goodness leaders in the philosophical subjects are coming to recognize that the sciences have real cultural value, and I am trusting that this thought of the cultural value of medicine will get a good deal of attention and the real cultural value of the subject be brought out.

Referring to the first statement that the majority of these gentlemen are cultured gentlemen, I see no reason why there should not be a successor to Weir Mitchell among them.

DR. W. C. MACTAVISH, Washington Square College: You must not forget the practical side of this particular problem. It is interesting to find that the students who did not have as much science preparation as the others did so much better than the average, but we must remember that the student preparing for entrance to medicine is faced with a very practical problem.

You all recall that some years ago our medical students came directly to medical school from high school. The professor of chemistry in the medical school started with the metric system and then went on with brief courses in physics, inorganic chemistry, qualitative analysis, organic chemistry, etc. The subject matter in biological chemistry was not usually given before the second year of the medical course. The necessity for this has passed, yet there is still difficulty in arranging the curriculum of the medical school so that all necessary material may be presented. How much more difficult it would be if the previously mentioned courses still had to be given in the medical school.

The chart presented by Dr. Thorpe shows that some students have entered medical school with only 20 to 34 per cent of their college work in science. I believe that very few students would be accepted in the medical schools at the present time with so few courses in science. If you consider the requirements in biology, physics and chemistry and total these units, you will see they comprise almost half of the number of units that a man will require to complete his three year premedical course. Every student knows he must have credit in these sciences for admission to medical school. His chances of getting in without them is very slight.

Another thing: the question of grades in undergraduate work. Whose fault is it that the student tries to earn good grades in his courses? It is certainly the fault of the medical schools. They will not take a man unless he has good grades. The thought certainly must be uppermost in the student's mind while at college that he must earn good marks in the sciences and other

subjects, otherwise he will have no chance of being admitted to a medical school.

In regard to culture, I remember very well when students were admitted to medical school directly from high school and the majority were certainly not cultured. I know quite a few, some who are members of our faculty, whose appreciation of music, art and literature now compares favorably with men who have taken a Doctor's degree in literature or music.

I, too, feel that medical students have very little time to study literature and cultural subjects while at medical school, but if they have any urge for this learning they certainly do study it in later years. Possibly, while waiting for their practice to develop they spend their time at this sort of thing! The fact remains that we all know many men who entered medical school with very little cultural education who now have a profound knowledge of the arts and are able to read and appreciate literature in foreign languages.

Dr. Lyon's statement that the cultural value of science compares favorably with the cultural value of other subjects, in my opinion, is especially true.

Dr. S. Willis Prowse, University of Manitoba: I enjoyed Dr. Thorpe's paper very much. I think I would have been prepared to enjoy it more had the title not been restricted to "Relative Value of Cultural Courses in Premedical Training". I think culture may come quite as much from the medical training as from the premedical. I think that culture so far as it can be imparted to students, rests largely with the student.

It has been accepted by a number here that we cannot, to paraphrase, "Make a silk purse out of a sow's ear." If we have the silk, the purse can be made, and the culture can be instilled and the finished product exhibit that culture quite as much after he gets into the medical school as before.

As a corollary to this, I come to a pet hobby of my own, which, to many in this audience, will be heresy. I am one of those who contended there is a place in the medical curriculum for the didactic lecture. I do not think it would be well for medicine should the day arrive when the didactic lecture in the undergraduate training of the student will be entirely superseded. If there is one reason more than another why I think that lecture should be retained—and the Lord knows I do not want it to be retained in the case of every person who might attempt to deliver lectures on his subject, but for the sake of those chosen few who can lecture to medical students in such a way as to instill not only culture but love of their profession, respect for those who have gone before and many other of those qualities which we are in the habit of summing up under the word culture—I think there is sufficient ground for retaining the didactic lecture. The man must be to that extent peculiar that he can inspire the students not by rehashing to them what they can read quite as well, and, certainly better illustrated, from almost any of the textbooks, but by passing on to them the results and lessons which he has gathered from an experience more or less prolonged of those things which have not obtained a place in the textbooks.

I am especially grateful to Dr. Thorpe because of one feature of his address. He ended his address by selecting from the whole domain of classical literature the only quotation with which I am personally familiar.

Dr. Louis B. Wilson, University of Minnesota: In my mind, culture is associated with leisure of thought. It very rarely comes early in life. I am

quite certain the three notable examples of cultured American physicians that have been mentioned did not exhibit their culture before thirty years of age.

Dr. Lyon has said that culture was a thing he doubted whether we could give. I am certain we can not give it, but I am also certain we frequently repress it. Perhaps, after all, the greatest meaning of this new freedom which we are talking about in the medical schools lies in the opportunities which it may give the student to pursue useless knowledge, to take over some interest in those things which he does not have to study. If it results in that, then the students in the medical school will acquire more culture, I think, than they have in the past. In the last analysis, whether science or literature bring culture lies in the attitude of mind of the man studying those fields. If he is forced to study Latin or Greek, he will not be cultured. If he has to study physiology, anatomy and physics, he will not be cultured. If he studies either of them as something aside, in the spacious chamber of his mind he realizes their real value, and it is this acquisition of the, to him, useless knowledge which in the end makes him a cultured man.

Dr. Edward S. Thorpe, University of Pennsylvania: I must confess that the reason I was tempted to be so brash as to write this paper was because several times in my very limited experience as assistant dean young men who have had an arts course in college have come for an interview, as applicants to our medical school. They have had little or no science training. I have always felt sorry for some of those men who are obviously brilliant students because they were forced to return to some graduate school and take additional courses and thus, as Dr. Novy said, wear off some of their edges and the keenness of their intellects in getting ready to go into a medical school. I am sure they would have been satisfactory medical students without this work.

I am reminded of Laycock's delightful essay on how to build a university in which he had as a central part of the university a nice smoking room, soft, easy chairs, lots of ash trays, a pipe rack, and plenty of tobacco. The second building he would build on his campus was a library where the students might browse and pick up books, take them back in the smoking room and discuss them with friends.

Of course, another important building was a laboratory where they might try out their theories from the perusal of those books.

Unfortunately, when a student goes into a college or university and announces that he intends to study medicine some day, he then is introduced into a sort of rabbit run. You know a rabbit run is a sort of funnel-shaped contraption of boards that a farmer uses, and he has dogs and boys scouring about for the rabbits to drive them into this funnel-shaped contraption, and he stands at the other end with an ax and chops off the heads of as many as he can reach.

In our premedical schools we drive these boys down a sort of rabbit run. At the other end of the rabbit run the dean of the medical school stands with an ax and he chops off the heads of about 50 per cent of them. About 50 per cent escape his efforts and get into the medical school.

May I also be so bold as to suggest to Dr. Lyon two possible definitions of culture, the first one a long one, and the second one a rather short one. First we might say that culture is a combination of personality, character, a broad catholic knowledge of all subjects, and an exact and intensive knowledge of one

subject. This definition might be translated by the sort of stenographic colloquialism of the flapper into the combination of "It" and "S.A."

DR. E. P. LYON, University of Minnesota: Some way my mind reverts around cases like these. One of my good friends in college was the best Greek student of the class. Now he is a mining engineer. I see him occasionally. He says he reads the technical journals a little and looks at the newspapers, but that is all he is reading. He does not like music; he is not interested in drama.

I have in mind also a doctor in Minneapolis who might have been a mining engineer, or a pick and shovel man, so far as I can see. He came over in the steerage from a low class of European society and worked his way through the university and medical school. His home is full of books and pictures. He is a patron of music and the arts, and I suppose you would call him cultured. I suppose you would call the other man not cultured.

Some way I can not help but feel that the avenues were much more open as a youngster to the first than to the second, and yet the second arrived so far as what we call culture is concerned, better than the first.

It is things like that that make me think inherent quality is more important than details of curriculum. The curriculum is a race course and the horse that is on it is the result of breeding in that true sense, the biological sense. I do not mean that you have to begin with the grandparents in selecting students for medical schools, but I do mean that about nine-tenths of those selected will not be of the type that will get far in a cultural direction.

There is a good deal of talk in our universities about producing leaders. Some way it leaves me cold. I think leaders emerge. They are not ordinary men; they are not made leaders by formal education, although they may be assisted by it; they emerge. Look at Abe Lincoln; Al Smith.

That does not at all take away from certain practical questions. One is what kind of college course is best for the average man? It happens that my college course struck here and there, I suppose quite purposelessly as most people would say. I did not come from a university. I am a small college man. I am not a medical man, but I took graduate work in physiology with only fairly decent courses in chemistry. I had rather better physics, but my college course, as a whole, was broad and not deep. In the end it turned out fairly decent, and I have been satisfied, and very glad it was so.

I think we ought to loosen up this premedical course for the fellow who naturally has a curiosity in various directions. I do not think that the curiosity which leads the man to love history or the humanistic subjects is a bit different from that curiosity which we call scientific curiosity. It is an innate, inherent thing, and it will take him almost everywhere because of its appeal to him.

I do not think that we need fear very much that our medical courses are going to keep any man from culture whose tendencies take him to a broad outlook. Honestly, I feel the trouble with a good many of our graduates, is that in spite of everything they are terribly narrow-minded. I do not know how to get away from that. I do not think that putting cultural subjects into our curriculum would help them.

This is all a case of belief and feeling on my part. But personally, I would prefer an ounce of heredity to ten thousand pounds of opportunity.

# Instruction in Anatomy in Germany

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*(Concluded from page 46, January issue)*

## Teaching of Anatomy

Since the manner in which anatomy is taught is the special subject of this article, my observations as made during a three-months visit at one of the largest institutes, and during visits to other large and small institutes in various widely separated cities in Germany, will be presented somewhat at length. The lecture method is relied upon predominantly throughout Germany both by teachers and by students. It is by far the favorite method for instructing and learning, and teachers are classified as good or poor by their colleagues, as well as by the students, according to their ability to lecture. The German student would much rather receive instruction in the lecture hall than in the laboratory. The teachers in their lectures cover the entire field of both microscopic and macroscopic anatomy very thoroughly, and explain in great detail the structure of each part of the body. Most of the information could be read by the students in textbooks. Charts, lantern slides, models, and demonstration dissections are plentifully used in the lectures. In the larger medical schools as many as six or seven hundred students will be listening to a lecture at one time. This number fills to capacity the largest lecture rooms in the modern institutes. Some of the institutes which are housed in old buildings experience considerable difficulty in accommodating the large numbers of students in their small, antiquated lecture rooms, causing the already overloaded teachers further work and worry. The writer was informed that in some places where the lecture rooms were not sufficiently large to accommodate all the students, some of them are placed in other rooms in which radio amplifiers have been placed, and the lecturer speaks before a microphone, but he did not see this method in use. The professors are usually very good lecturers, for that is one qualification which seems to be considered in selecting them; all whom the writer heard did their lecturing very earnestly, thoroughly and efficiently.

## Laboratory Subordinate to Lecture

An observer can see every indication that the laboratory work, especially in gross anatomy, is considered as subordinate to the lectures in importance. This attitude toward laboratory exercises may be due

to adverse conditions, such as many students, few teachers, and few cadavers for dissecting purposes. In order to give the reader some idea of the present conditions, the laboratory work will be described as it is given in three particular institutes of anatomy, viz., A, one of the largest; B, a medium sized one; C, smaller than the preceding, but not one of the smallest.

The total number of students in the medical school to which institute A belongs was slightly over two thousand in the winter semester of 1929-30. Of these students more than eleven hundred were studying anatomy in the institute of anatomy, and were distributed according to classes as follows:

| | |
|---|---|
| Medical students in Winter Semester I | 570 |
| Medical students in Winter Semester II | 392 |
| Dental students in Winter Semester I | 160 |

The dental students have their lectures and laboratory work in both gross and microscopical anatomy separate from the medical students. They do their dissecting at the same time as the medical students and under the supervision of the same teachers, but in a laboratory reserved exclusively for their use. For dissecting work, the dental students use scraps of adult material and infants from the obstetrical clinics.

### Microscopic Anatomy

About four hundred of the medical students were taking the lectures in microscopical anatomy during the winter of 1929-30, and they were all in Winter Semester I. The remaining students in this winter semester took the lectures in the preceding summer semester. A forty-five minute lecture is given on each of six days per week. All of the four hundred students can be seated in the lecture room at one time. Most of the two hundred and fifty medical students who were taking the laboratory course in microscopical anatomy during the winter semester of 1929-30 heard the lectures in the summer semester of 1929. The teachers encourage the students to take the lectures in one semester, and the laboratory work in the next, the lectures and laboratory work being identical in the summer and winter semesters. The laboratory work, which consists of microscopic examination of prepared specimens mounted on slides, is given in two ninety-minute periods per week. Since only one hundred and fifty students can be seated in the laboratory at one time, it is necessary to repeat the exercise on two other days in each week. Each student is provided with a microscope by the institute without charge, but he can use it only during the regular laboratory period, for he is not permitted to take it home, and the

laboratory is locked when not occupied by a class. For instructing these students there are but three teachers, who go about the laboratory, assisting and quizzing the sudents. Occasionally they take up at random the drawing books of some of the students, and inspect them. Since there are only three teachers for two hundred and fifty students, these inspections are not very thorough, and are designed chiefly to the end of keeping the students busy. Each student has a card which must be signed by one of the teachers if his work has been satisfactory. This card must be turned in to the director at the end of the semester in order that the student may obtain a certificate (Zeugnis) signed by the director, showing that the student has successfully completed the required work in microscopical anatomy in that institute. The student keeps this certificate as a credential in case he migrates to another medical school, or when he presents himself for the Physicum examination.

### Fees

The fees paid by each student for histology in either the summer or winter semester are as follows:

| | |
|---|---|
| Fee for the lectures | 9 R. M. |
| Fee for the laboratory course | 28 R. M. |
| Fee to cover damage | 4 R. M. |

A student is excused partially or entirely from payment of fees if he can furnish satisfactory evidence to the faculty that he is unable to pay.

All the lectures and the laboratory work in microscopical anatomy are given by the director. He receives only a percentage of the student fees, however, as the university and institute of anatomy share in them also. The director pays each assistant teacher 500 R. M. per semester.

### Gross Anatomy

The course in gross anatomy for medical students in both Winter Semesters I and II consists of a forty-five minute lecture and two and one-half hours in the dissecting room on each of five days per week. Each student pays a fee of 38 R. M. per semester for the lectures and 85 R. M. per semester for the dissecting course. The university and institute of anatomy share in these fees, but a large portion of them is paid to the director, who has charge of the lectures and laboratory courses in gross anatomy. He pays 1,000 R. M. per semester to each of his faculty assistants. The director in institute A derives an annual income of approximately 60,000 R. M. from his regular salary and student fees.

The large dissecting room used for medical students cannot accommodate all of them at one time, therefore the five hundred and seventy students in Winter Semester I were divided into two equal groups, (a) and (b). All of the three hundred and ninety-two medical students in Winter Semester II were in the dissecting room each day, but only one group of the students in Winter Semester I could be in the room at the same time. Therefore, it was necessary for the two groups, (a) and (b), to alternate with each other in doing the dissection. The students in group (a), for instance, would be in the room for one week, dissecting and studying the muscles of the back. The next week the students in group (a) would not come to the dissecting room, and the students in group (b) would take their turn, first studying the dissection of the muscles of the back as made by group (a), then dissecting and studying the muscles of the abdominal wall. In this manner the students in each group obtained some practice in dissecting if they wanted it. For these five hundred and seventy students of Winter Semester I there were thirty-four entire cadavers, which meant that there were sixteen or seventeen students to each cadaver. Since only one-half of these students were in the dissecting room at one time, there would be eight or nine students working on one cadaver simultaneously.

### Dissection Course

All of the students taking the course in gross anatomy for Winter Semester II could be accommodated in the dissecting room on each of the five days per week. These students were dissecting the nerves and blood vessels only. For this work sixteen cadavers were used. The head had been removed from each cadaver and the latter had been cut into four quarters, so that there was an upper extremity and a lateral half of the thorax in each upper quarter, and the lower extremity and lateral half of the lumbar and pelvic regions in each lower quarter. The viscera in these cadavers had been studied before the quartering was done. Since there were three hundred and ninety-two medical students in Winter Semester II, and sixty-four quarters of cadavers, there were six students to each quarter. These students were densely crowded into one side of the laboratory at small tables, with scarcely space for passage. For brain dissection there is usually only one human brain for twenty-five or thirty students.

To supervise the dissecting work of these nine hundred and sixty-two students and one hundred and sixty dental students there were eight faculty members acting as teaching assistants to the director and eight

student co-assistants. The latter do not examine students, and are of little real help. The faculty assistants move about the room from group to group of students, helping them with their dissecting and quizzing them.

Each of the five hundred and seventy medical students in Winter Semester I has a card on which are twelve items of dissection of muscles, viz., abdominal wall, thorax, back, neck, deep back, arm, forearm and hand, thigh, leg and foot, head, joints of upper extremity, joints of lower extremity. Each of the three hundred and ninety-two medical students in Winter Semester II possesses a card on which are eleven items, viz., thoracic cavity, abdominal cavity, male genitalia, female genitalia, head, neck, upper extremity, lower extremity, brain, perineum, child. Likewise, each of the one hundred and sixty dental students has a card containing five items, viz., muscles of head, nerves and vessels of head, thoracic cavity, abdominal cavity, child. Each student must obtain on his card the signature of one of the faculty assistants opposite each item indicating that the student has been quizzed by the assistant on each item and his knowledge has been found to be satisfactory to the assistant. This would mean that during the fifteen weeks in the winter semester of 1929-30 each of the eight faculty assistants in the dissecting room was required to make an average of at least 1,494 oral quizzes! Necessarily the quizzing cannot be very thorough. At the end of the semester each student must present his card with each item of dissection signed by a faculty assistant before he can receive from the director a certificate (Zeugnis) signed by the latter to the effect that he has been in attendance in the dissecting room during the semester indicated and has successfully performed the required work.

During the dissecting period there was much noise and confusion from talking and moving about by the students, and the hallways outside the dissecting room were usually filled with students smoking, conversing in groups, or strolling. An atmosphere of serious and diligent application to the work at hand was lacking, and there was much evidence of waste of time by the students. Apparently little opportunity was afforded for individual students to talk to the faculty assistants, even in the dissecting room. At the end of the dissecting period, the room was cleared, and the doors were locked, and kept locked until the next period. The faculty assistants retired to their laboratories to continue their research, and were rather inaccessible to the students.

## Elective Courses

Interested students may supplement the regular courses in microscopical and macroscopical anatomy by taking elective courses in embryology, topographical anatomy, and histological technic, but very few do this. For instance, all medical students are expected to know how to cut, mount and stain sections of tissue imbedded in paraffin, but only about forty usually take the course provided for teaching this. Just before the physicum examination, however, those students who have not learned this technic will go to one of the technicians and pay him a few marks to teach them, which he does in a few minutes. The number of students who take the courses in topographical anatomy and embryology is also insignificant in comparison with the total number of students in anatomy.

## Examinations

The work in anatomy, and in other laboratory subjects constituting the preclinical division of the medical training, is usually completed at the end of the fourth semester; any student who wishes may take the examination at this time, but practically all of the students use a fifth semester in preparing for the examination, and some postpone it a year or more. During these four semesters the only tests which the students have are the very superficial oral laboratory quizzes. There are so many students and so few teachers that these quizzes can not possibly be of any use in evaluating a student's knowledge or ability. There is but one examination for all the work done in the preclinical division, that is, during the first four semesters, and it is called the Physicum. The Physicum is given during the first part of November, February, May and July, at the beginning and end of each semester. For giving these examinations each year, the faculty of medicine appoints a chief examiner for all departments, and two or three assistant examiners for each department or institute. All examiners must be of the rank of privatdozent, or higher.

## Institute A

The Physicum is one cause of migration of students. Institute A has the reputation of giving hard examinations, therefore many of the students will move to some small institute where the examinations are known to be easier. A student must remain at least one semester in any institute which he enters. The examinations in the small institutes must be very perfunctory, however, if they are any easier than those in Institute A. I was present at the Physicum in anatomy of several candidates in Institute A. They were examined in groups of

six. The six students were assembled in one small room at nine o'clock; each was given a piece of human material, and was told by the examiner to make a specified dissection. For example, one student was told to dissect an arm, another a hand, a third the axilla, a fourth the shoulder, the fifth the posterior compartment of the leg, and the sixth the femoral triangle. The students were allowed an entire day in which to make the dissection, and were left to themselves. They could use any assistance they desired in the way of books, and there was nothing to prevent a student from getting another to make the dissection for him.

At 9 o'clock in the morning on the second day the six students were assembled by the examiner in another small room. On tables in this room were six microscopes, each with a slide on which was mounted a stained section of tissue. At the side of each microscope was a simple, sliding microtome with a knife, and a block of tissue in paraffin fastened in the holder, carefully shaved off, all ready to be cut. There was also on each table a set of staining jars containing alcohols, hematoxylin and eosin. The students were allowed one hour in which to study and identify the mounted specimen, and to cut, mount and stain a section from the block of tissue in the microtome. All that was nccessary for the students to do in cutting the tissue was to draw the knife across the block, for everything had been carefully prepared and adjusted for them by the technician. When a student had completed the mounting and staining, and had identified the tissue which he had cut and stained, as well as the one already prepared, he was asked a few questions regarding each of the two tissues by the examiner, was given a mark and excused. The questions and answers for each student did not consume more than ten minutes. This constituted the examination in microscopical anatomy. At two o'clock the examiner proceeded with the examination in gross anatomy. The students were summoned in turn into an adjoining room and examined separately; each brought his dissected specimen, which he had been studying for more than a day, and was asked a few questions regarding it. He was then asked a few more questions regarding a specimen of dissection which the examiner would select from the small museum case. The examination of each student consumed about fifteen minutes. The examinations in both microscopical and gross anatomy seemed to me to be very inadequate, and most of the students seemed poorly prepared, especially in view of the fact that they had an entire day in which to study their dissections.

### Failures

Seventy students were examined by this one professor, and seven of them failed to pass. I was informed that from eight to ten per cent of the students usually fail in anatomy in the Physicum the first time. A student who fails in only one subject may take another examination in that subject at the next Physicum; but if he fails in two or more subjects, he must wait for an entire semester before being re-examined. The chief examiner must be present at this second examination, which is called the Tentamen Physicum. If the student fails a second time, he can apply to the minister of education for another chance, and invariably he will be granted a third opportunity. Also, if a student fails in one instance, he can go to a small institute where the examinations are easy, and take another examination, after remaining there one semester. I was informed by the director of one institute that it is practically impossible to fail a medical student, and that the standards for examinations are lower in medicine than in any of the other professions. I made no investigation into the clinical instruction, but was informed that the conditions are no better there than in the laboratory division, and that practically no students fail.

### Institute B

In the medical school of which Institute B is a part there are approximately fourteen hundred students in the winter semester of 1929-30, of whom about seven hundred were taking the required courses in anatomy. This institute is housed in a very old building, the rooms and halls of which are heated by means of stoves. The teaching staff consists of the director, one planmässige ausserordentliche professor and two young privatdozents. This small staff is one of the most progressive in the country. There are approximately four hundred students taking the lectures and laboratory course in histology. Both the lecture room and the laboratory are too small to accommodate all of these students at one time, therefore the class is divided into two groups, and the lectures and laboratory exercises must be repeated. This institute has a budget of only 30,000 R. M. per year, exclusive of salaries, consequently the laboratory equipment is very meager; for instance in each class in histology there is but one microscope for the use of each pair of students. All the microscopical slides are prepared by the technician of the institute, and an entire set of one hundred such slides is presented to each student to keep as his own. The technician makes over four thousand slides every year for this purpose. The director informed me that even with the possession of a set of slides, and with

the handicap of two students to one microscope, very few of the students purchase microscopes for use at home, and attributed this fact to a lack of interest on the part of the students, for many of them are financially able to buy microscopes. The director gives all the lectures in histology and some in gross anatomy, and with the assistance of one privatdozent teaches the laboratory work in histology.

Almost seven hundred were taking the lectures and dissecting course in gross anatomy in the winter semester of 1929-30. All of these students could not be in the dissecting room at the same time, therefore they were compelled to take turns at dissecting. There were about forty cadavers for the dissecting exercises. A few more than one-half of these were left entirely for the students in Winter Semester I, while the remainder were quartered and used by the students in Winter Semester II. This institute is located in a small city, hence that entire section of the state has been allotted to the institute for collecting cadavers. The director is required to do his own collecting, and for this purpose keeps an ambulance automobile and driver on the road almost all the time in search of unclaimed bodies. At best, he obtains only about fifty to sixty per year.

Some of the lectures and all of the laboratory work in gross anatomy are given by the ausserordentliche professor. He is assisted in the dissecting room by one of the privatdozents and two or three practicing surgeons, as well as by some student assistants.

The members of the staff also give courses in embryology and topographical anatomy. In addition to all the teaching, the director and the one other professor must personally conduct all examinations. In 1929 they examined ninety students in February, one hundred and twenty in May, seventy in July, and one hundred and sixty in November, making a total of four hundred and forty for the year. Examination of seventy students, the smallest number examined in one Physicum, would consume at least six days of one man's time. The director stated that from ten to fifteen per cent. of the candidates fail the first time in the Physicum, but that eventually all the students who fail would be passed in some institute. Each of the four members of this teaching staff is actively engaged in research work, and publishing papers every year.

### Institute C

The university of which Institute C is a part is one of the oldest in Germany. The institute occupies the original building, which is very old. Here also, the rooms must be heated by means of stoves. In the winter semester of 1929-30 approximately one thousand students

were attending the medical school. Four hundred and fifty medical students and one hundred dental students were taking the lectures and courses in the institute of anatomy. This institute is in one of the smaller and less prosperous states, and has an annual budget of only 20,000 R. M. for operating expenses, exclusive of salaries. There are four regular teachers on the staff, namely, the director, two professors, and one privatdozent. Laboratory space in this institute is so limited that the courses in histology and gross anatomy can not be given simultaneously. The course in histology is given in the summer semester, and that in gross anatomy is given in the winter semester. During the winter semester the histological laboratory is used as a dissecting room for the dental students. Lectures and demonstrations in histology, however, are given during the winter semester, consuming seven hours per week. Two hundred and thirty medical students were taking these lectures in the winter semester of 1929-30. The lecture room is very small, but all of these students were packed into it at the same time. The lectures in histology are supplemented by demonstrations, consisting of several microscopes set up in a museum room, each showing a section of tissue mounted on a slide, with a descriptive card on the table explaining the section in detail. These specimens are on display during the entire day, and the students may examine them at any time they choose. The dental students have a separate course of lectures in histology during the winter semester, and laboratory work during the summer semester.

For the medical students in Winter Semester I there were twenty-two entire cadavers, and for the students in Winter Semester II, who were dissecting nerves and blood vessels, there were twenty cadavers cut in four quarters. The dental students occupied a separate room, and dissected the head, viscera, and one extremity, using adult human material. From fifty to sixty cadavers are all that can be obtained each year. For the lectures in gross anatomy the students are divided into three groups, namely, medical students in Winter Semester I, medical students in Winter Semester II, and dental students. All the students are dissecting at the same time.

There are also courses in embryology and topographical anatomy during both the summer and winter semesters. The four members of the faculty do all the teaching. Three or four practicing physicians and some advanced students are used as assistants, but they are said to be of little real help. The director, as usual, does most of the lecturing, and supervises the laboratory work, thus receiving most of the student fees. As in all institutes, he pays a portion of the fees to his

teaching assistants. In addition to the teaching, the director and the other two professors conduct all the examinations. Each member of the teaching staff was busy with various research problems during every available moment.

This rather brief description of three institutes differing in size and widely separated in location will give the reader a picture of the teaching of anatomy in all parts of Germany. The courses of study and the methods of teaching them are very similar in all the institutes of anatomy. This facilitates the migration of students from one institute to another, and most students migrate at least once. Several factors cause migration, the chief one of which is that most students desire and are encouraged to have experience in more than one institute. Other factors are size of cities, living expense, famous lecturers, examinations, opportunities for amusements and sports. Few of the undergraduates are thought to migrate in order to be in the institute where there is a particularly famous scientist. Graduate students, of course, go to the man with whom they wish to study. There are very few graduate students in anatomy. New teachers are recruited from student assistants who become interested in teaching, but these are not numerous.

### Civil Status of Teachers

The teachers in German universities hold enviable positions in many respects when compared to the positions of teachers in American universities. They are self-governing, elect the presidents and deans from their own members, name the directors of institutes, nominate all new additions to their group, have secure tenure of office and consequently academic freedom, with the right of trial by their colleagues in the event of being accused of any serious offense.

It seems quite probable that universities in the United States would profit by adopting the plan of organization used by universities throughout all Europe, and rewrite their constitutions in order to separate the financial from the academic affairs, vesting in the faculties entire control over the latter, and giving to them the same powers and privileges as are held by the faculties in European universities.

### Remuneration of Teachers

With their salaries, student fees, and allowances for dwelling and children, the teachers in German universities enjoy a comfortable financial condition, considering the present costs of living, and can look forward to a pension upon retirement, or a pension for their widows and children in case of death. In several institutes of anatomy in

Germany the director receives an annual income in money which amounts to more than the highest salary paid to the director of the department of anatomy in any medical school in the United States, and the cost of living is less there than here.

### Too Many Students

The large numbers of students in the institutes of anatomy offer a serious problem to the teachers, and places a severe burden upon them. There is said to be little money available for the erection of new and larger buildings. Some institutes have put up temporary wooden buildings which are used as laboratories. In almost all institutes the large classes are divided into smaller groups which can be accommodated separately in lecture rooms and laboratories, and the teachers are thus forced to repeat lectures and laboratory exercises. In all the institutes the number of teachers is far too small in proportion to the number of students. The teachers ascribe two principal reasons for this; firstly, the states are loath to supply necessary funds for employing additional teachers; secondly, the directors of institutes are not especially insistent upon adding more teachers to the staff, because that would necessitate their sharing the student fees with a greater number of assistants. The scarcity of dissecting material in all parts of Germany adds to the difficulties in handling the great numbers of students. The lack of material is attributed to several factors, namely, claiming of bodies by relatives, activities of burial societies, zeal in collecting burial fees by priests, embalmers, and even grave diggers. In the smaller cities and rural communities fees must be paid to all of these, even for those bodies which the institutes of anatomy succeed in obtaining.

The great numbers of students in proportion to the teachers make it impossible for the latter to give adequate examinations, either in the laboratory quizzes or in the Physicum. The ease in passing this examination as well as the Staats examination, which comes after the end of the clinical instruction, constitutes a real evil.

All of these unfavorable conditions are greatly deplored by most of the teachers, and through committees of their two national organizations, the Assistentenverein and the Hochschulverein, they are working to devise methods for producing improvement. They are particularly desirous of raising the standards of examinations and make it possible to remove weak students from the medical schools.

As a group the teachers are well trained men and women who are indefatigable workers, both in teaching and research. In addition to

carrying a tremendously heavy teaching burden, almost all the instructors in the institutes which I visited were busy at research work during any available time, and were frequently publishing results of their investigations; many were also writing books, or sections of books by joint authors. They command one's greatest respect and admiration.

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## Report of the Committee on Educational Policies

The Committee again this year considered the subject of premedical requirements and especially the proposal to state these requirements in terms of course content rather than in terms of semester hours. The Committee feels that it should be the policy of this Association to require broad general courses dealing with general principles and that, at least at the present time, it would not be in the best interests of this policy to endeavor in any way to restate the entrance requirements.

The Committee feels that this Association should recognize its responsibility in regard to the increasingly important subject of graduate medical education, and that further careful study be carried on in regard to the matter. In this connection the committee feels that it would probably be unwise at any time to specify in detail the content of such graduate study but does feel that the Association should formulate certain general principles and policies in regard to it.

The Committee was requested by one of the member colleges to consider the matter of the teaching of physical therapy in the undergraduate course in medicine. Although recognizing the value of the work and the spirit of the request, the committee feels that it is contrary to the present policy of the Association to make any definite suggestions in regard to the details of the medical curriculum.

The Committee also considered a communication from the Committee on Fractures, of the American College of Surgeons expressing a desire to cooperate with this Association and asking approval of the recommendations in regard to the teaching of fractures. Here, again, although recognizing the great value of this work, the committee feels that it is contrary to the present policy of this Association to take any definite action in regard to the matter.

(Signed) H. G. WEISKOTTEN, Chairman
JOHN WYCKOFF
E. S. RYERSON
FREDERICK T. VAN BEUREN, JR.

# Requirements for Admission to Medical Colleges

## Extract from By-Laws of Association of American Medical Colleges

Sec. 4. REQUIREMENTS FOR ADMISSION. Admission to medical schools and medical colleges in membership in the Association may be by:

(1) Satisfactory completion of a minimum of collegiate instruction, as provided below in Subsection I: or by

(2) Examination, as provided in Subsection II.

SUBSECTION I. The minimum of collegiate instruction required for entrance to medical schools and medical colleges in membership in the Association shall be 60 semester hours of work, which shall include the subjects hereinafter specified, in institutions approved by accrediting agencies acceptable to the Executive Council of the Association. Exception may be made under this section in that any member may admit applicants who have fulfilled the requirement in American or foreign institutions not approved by such accrediting agencies, provided that all admissions so made shall be reported to the Executive Council and shall be published in the next annual report of said Council.

All collegiate instruction given in satisfaction of this requirement must be based on the same entrance requirements and must be of the same quality and standard of instruction as that required for a baccalaureate degree in the institution in which the candidate receives his preparation.

The 60 semester hours of collegiate instruction, indicated above shall include a minimum total number of semester hours in each of certain required subjects and the specified science subjects shall include a minimum number of semester hours of laboratory work as follows:

| Requested Subjects | Minimum total semester hours | Minimum semester hours of laboratory work |
|---|---|---|
| 1. General Chemistry (a) | 8 | 4 |
| Organic Chemistry (b) | 4 | 0 |
| 2. Physics (c) | 8 | 2 |
| 3. Biology (d) | 8 | 4 |
| 4. English Literature and Composition (e) | 6 | .... |

Explanation as to content in each of these required college subjects together with suggestions to desirable additional study in certain subjects are as follows:

(a) General Chemistry. Eight semester hours required, including 4 semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be included as part of general chemistry.

(b) Organic Chemistry. A completed course of 4 semester hours required, consisting of didactic exercises, which should cover a discussion of the aliphatic, carbocyclic, and heterocyclic series.

(c) Physics. Eight semester hours required, of which 2 semester hours shall consist of laboratory work. It is urged that this course be preceded by a course in plane trigonometry.

(d) Biology. Eight semester hours required, of which at least 4 semester hours shall consist of laboratory work. This requirement may be satisfied by a course of 8 semester hours in either general biology or zoology, or by courses of 4 semester hours each in zoology and botany, but not by botany alone. Courses in physiology and hygiene, sanitation, entomology, bacteriology, histology and similar subjects covered in the medical curriculum shall not be accepted as part of the premedical college requirement in biology.

Students who present at least 90 semester hours of college work may substitute for the above biologic requirements at least 8 semester hours in the psychologic or sociologic sciences.

(e) English Composition and Literature. The usual introductory college course of 6 semester hours or its equivalent is required.

SUBSECTION II. Admission to medical schools and medical colleges in the Association may be granted to candidates on the basis of examinations as hereinafter provided. These examinations shall be conducted by such agencies as may be designated from time to time by the Executive Council of this Association.

(a) Candidates who have completed not less than 60 semester hours of collegiate instruction, but who lack the full requirements in not more than two of the required subjects may be admitted on successfully passing examination in these subjects as above provided.

A candidate to be examined under this section must give evidence of scholarship of high order.

(b) Candidates who have completed not less than 90 semester hours of collegiate instruction, but who lack credit in any or all of the required subjects, may be admitted on successfully passing examinations in these subjects as above provided.

All candidates for the comprehensive examination must present evidence of having accomplished work of distinction in one or more fields of learning.

The standards of instruction shall be as specified under Subsection I.

Sec. 6. Any medical school or medical college in membership in the Association may, with the consent of the Executive Council, substitute for the requirement laid down in Section 4 a six year combined collegiate and medical curriculum. The substitute plan shall provide the inclusion of the equivalent of at least 60 semester hours of subjects ordinarily given in the academic departments of standard American colleges of arts and science, including the required subjects specified in Section 4. In addition, the plan shall include requirements equivalent to the curriculum set forth in Section 5. The medical school must submit to the Council of the Association the proposed six year curriculum giving the sequence of studies and the content and credit value of each course offered. Subsequent proposed changes in this six year course must likewise be submitted to the Executive Council for approval before they go into effect.

Sec. 7. The Association through its Council and Committees is prepared on request to act in an advisory capacity to institutions engaged in preparing students for entrance to medical schools and medical colleges.

JOURNAL
OF THE
Association of American Medical Colleges

Volume 6 MARCH, 1931 Number 2

DR. FRED C. ZAPFFE, Editor, 35 East Washington Street, Chicago

## The Journal

The editor again desires to call the attention of the teachers in medical schools to the fact that this is their Journal. There are some who feel that only such papers as are read at the annual meetings are published in the JOURNAL. It is evident that they have not read carefully. About one-third of the papers published are volunteer papers.

There are approximately 12,000 teachers of all ranks and grades in the medical schools of the United States and Canada. While this Journal is not sent directly to all of these 12,000, it is not much out of the way to assert that a large number of them have a chance to read it, because the thousands who do receive it, no doubt make it a point to pass on their copy so that all members of departments may read it. Furthermore, every medical school library receives a copy.

It is the object to bring this JOURNAL close to each medical educator and teacher by putting into it everything that can possibly interest him, and there is much evidence in support of the statement that the JOURNAL is making a place for itself. Suggestions for further improvement will be most welcome. There is no reason why every one of the 12,000 teachers in medicine should not receive this Journal, and they will when they make it their Journal in fact as well as in name.

The JOURNAL is recognized in the field of medical education and teaching not only by medical schools but by other educational institutions both in this country and abroad. The requests for it are increasing in number with each issue. There is hardly a foreign country that is outstanding educationally but what receives at least one copy of each issue. Why not! It is the only Journal in the world devoted to medical education and teaching. Rather a distinction. And it is supported entirely by a membership consisting of 80 medical schools situated in the United States and Canada and a few, a very few, individual and institutional subscriptions. That, too, is a distinction because it is unlikely that another similarly small group is supporting such an apparently gigantic undertaking without financial assistance.

Then, why should not every teacher help by giving personal support in the way of papers, news items, personal or otherwise, reviews of good books, queries, letters and anything that will make the JOURNAL even more interesting and useful than it is said to be now. Expression of views by writing editorials on subjects in which one is specially interested often results in unthought of reconstructions. Private discussions held in a corner do not reach many ears, but a paper or an editorial will reach thousands and the JOURNAL is an excellent distributing medium.

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## Increased Educational Responsibilities

Dr. Walter L. Niles, an ex-president of this Association (1927-1928), and for many years a member of its Executive Council, former dean of Cornell University Medical School, and now representing

that school on the joint board of directors of the New York Hospital-Cornell University Medical School Corporation, has always taken a great interest in the Association and its functions and activities. On numerous occasions he advocated placing the secretaryship on a full time basis in order that the Association could perform adequately those functions which properly came under its jurisdiction.

His views are well expressed in the following letter, which is published with his permission and consent:

New York, January 20, 1931.

Dear Dr. Zapffe:

I am pleased to learn that the annual dues for membership in the Association of American Medical Colleges were increased at the recent annual meeting, thus providing a larger budget for the activities of the Association. The larger expenditures undoubtedly will yield a good return. It is my belief that if the annual budget could be increased to twenty or twenty-five thousand dollars, medical education in America would be advanced materially.

It was my privilege to participate in the activities of the Association for ten years. During that time I became deeply impressed with the importance of the part which was played by the Association in the wonderful period from 1904 to 1920 during which medical education was reconstructed and stabilized in America. Despite lack of adequate funds the Association has continued to be the leading force in promoting the best thought in our field of education; indeed, it is and has been the only organization which has had advancement in medical education for its chief aim. That the Association has steadily grown in influence and importance is evident to all and it now holds a unique position for influencing educational thought.

For some time I have believed that the resources of the Association are not being adequately utilized. The sole reason is lack of adequate funds. That much remains to be done and that it could be accomplished by the Association is quickly evident to one who attends a few meetings and listens to the discussions which are developed. It has been necessary heretofore to enlist the aid of allied organizations to finance studies which should properly have been financed by the Association.

It is my opinion that the first and most important step would be to have the executive secretary give his whole time to the Association. It would then be necessary to establish headquarters in an office with the essential clerical assistance. This would serve as a repository and clearing house for accumulated data and would function as a bureau of information. With such an establishment there is no school of medicine which would not profit by an annual visit from the secretary. He would bring information regarding the ever-changing view concerning educational thought and procedures carried on in other schools; he would be a valued adviser to the executives and a stimulus to the faculties. He would naturally supervise and execute numerous studies which are now inadequately done, if at all, with great sacrifice on the part of individuals.

In conclusion, it is my belief that if the Association of American Medical Colleges is to fulfill its opportunities and responsibilities there must soon be an adequate income provided so that headquarters may be established with a full time executive secretary in charge. I hope this may be accomplished in the near future.

Yours truly,

WALTER L. NILES.

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The Congress on Medical Education is in session at time of going to press, Feb. 16-18.

# College News

## McGill University
## Faculty of Medicine

E. G. D. Murray, who for some years has been in charge of the Bacteriology Department at Cambridge University, England, has been appointed professor of bacteriology at McGill University. He comes with a high record of achievement in research. The Department of Bacteriology will be reorganized and enlarged, and, being housed in the Pathological Institute, which is adjacent to the Royal Victoria Hospital, increased facilities will be offered for clinical bacteriology as well as for research.

E. Hamilton White has been appointed associate professor of otolaryngology and otolaryngologist in chief to the Royal Victoria Hospital in place of Professor Birkett, who recently resigned.

C. M. Hincks, lecturer in mental hygiene at McGill University, has been appointed medical director of the National Committee of Mental Hygiene of the United States, in addition to a similar post for Canada. A. Grant Fleming, professor of public health, will accupy the position of associate medical director of the National Committee of Mental Hygiene for Canada. Arrangements are being concluded to offer more latitude for the better students of the undergraduate faculty to carry on advanced work during their course. More opportunities will be offered in the curriculum for research.

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## Laval University

A new $500,000 building to house law and medicine, the cancer institute and the biological laboratories will be begun this spring. Some of the present, old buildings on the proposed site for the new building will be demolished.

## Duke University
## School of Medicine

Three visiting lecturers recently held clinics and conferences: M. Weinberg, of the Pasteur Institute, Paris; I. S. Ravdin, of the University of Pennsylvania Medical School and William Castle of the Harvard Medical School.

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## Emory University
## School of Medicine

A new laboratory and a fellowship to be known as the Joseph Brown Whitehead Laboratory and Fellowship of Surgical Research, respectively, are announced. They are the gift of Mr. J. B. Whitehead, Jr., in memory of his father.

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## Jefferson Medical College

Thomas A. Shallow and Edward J. Klopp have been appointed professors of surgery and Charles F. Nassau and Arthur E. Billings clinical professors of surgery.

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## New York Post Graduate
## Medical School

The incorporation in the educational system of Columbia University of the New York Post-Graduate Medical School and Hospital was announced recently.

The agreement between the two institutions, effective July 1, 1931, makes the Post-Graduate School an integral part of the Columbia University teaching system and, in the future, the center of a comprehensive program of post-graduate medical teaching sponsored by Columbia.

To carry out the program for placing all of the post-graduate teaching on a university basis, provision for an interlocking of the governing bodies has been made. Dr. Butler has been elected a

member of the Corporation and of the Board of Directors of the New York Post-Medical School and Hospital. Dr. Butler also becomes president ex-officio of the Medical School of the Post-Graduate.

Dr. Arthur F. Chace has been elected president of the Post-Graduate Medical School and Hospital to fill the vacancy caused by the retirement some time ago of Dr. James F. McKernon, who had occupied this post for twenty-five years. To co-ordinate the work of the Post-Graduate School with Columbia University, an Administrative Board of Post-Graduate Studies in Medicine, on which both bodies are represented, has been established.

## University of Wisconsin

November 2, 1930, the cornerstone of the new $300,000 orthopedic hospital, now under construction on the campus, was laid. This hospital is the latest unit in the medical area containing the Wisconsin General Hospital, the Service Memorial and the Bradley Memorial. The hospital will accommodate 113 patients.

## University of Manitoba

Harvey Smith has resigned as professor of ophthalmology. Herbert Bell is his successor. Joseph L. Jackson has been appointed senior assistant professor of anatomy and acting head of the department. G. I. Boyd has been appointed second assistant professor of anatomy, J. C. Boileau Grant, head of the department of anatomy resigned to accept the similar position in the University of Toronto.

## Loyola University School of Medicine

The Lewis Memorial Hospital was formerly dedicated recently. It is a teaching unit of this medical school. Only maternity cases, falling in a designated class as determined by the income of the family, will be received.

## Columbia University College of Physicians and Surgeons

Willard C. Rappleye, for the past five years Director of Study of the Commission on Medical Education, has been appointed dean to succeed William Darrach, who resigned in June, 1930. Dr. Darrah will continue his work as full-time professor of clinical surgery.

## New York Polyclinic Medical School

The new twelve-story addition, constructed during the past year at a cost of more than $1,500,000, was formerly opened recently. The addition will provide ample ward space for teaching and also will provide additional space for clinics. Seven floors will be devoted exclusively to clinics, while four floors are designed for private patients.

The entire tenth floor of the main building has been reconstructed into seven new operating rooms and equipped with the most modern hospital facilities.

The new addition will increase the capacity of the hospital to about four hundred and fifty patients a day and at the same time permit clinical service to more than six hundred out-patients.

Frederick M. Allen has been appointed professor of internal medicine and Everett M. Hawks, professor of gynecology and obstetrics.

## University of California

The name "Medical Center" will be applied to the schools, colleges and research centers in San Francisco collectively. The group has been known as the "Affiliated Colleges," although the medical school, the college of dentistry, the college of pharmacy and Hooper Foundation have been integral parts of the University of California for many years. The University Hospital receives cases from all parts of the state, the outpatient department offers treatment to patients from practically every county in the state; the

College of Dentistry Clinic furnishes dental work to needy individuals for about the cost of materials; the Hooper Foundation for Medical Research and the pathology department of the medical school are cooperating with public health agencies and physicians everywhere. In addition, the Medical Center is now taking steps to protect California from tropical and oriental diseases which might be brought in through development of world commerce.

A shop will be opened which will assemble and fit braces, splints and other mechanical appliances for the relief of temporary or permanent injury, in accordance with a plan to extend the service of the University of California Hospital Out-Patient Department, a Community Chest agency, to citizens of the state crippled through accident or congenital deformities who have not money to pay regular fees. The purpose of the shop will be to make fittings of appliances of all kinds at the clinic under a physician's supervision. Dr. George C. Hensel will be in charge.

The Medical School Library, San Francisco, has inaugurated a "packet library service" to serve properly qualified physicians and medical institutions of the state. The library contains at present more than 35,000 bound volumes, 20,000 reprints, and 25,000 theses and miscellaneous pamphlets. It receives more than 400 current medical and dental periodicals from all the leading countries of the world; its periodical files include more than 700 sets of journals, of which 365 are complete. The facilities of the University of California Life Sciences Library in Berkeley, totaling about 50,000 volumes, and the resources of the General University of California Library, Berkeley, comprising more than 600,000 volumes, are also available through the package library service.

Jules Duesberg, rector and professor of anatomy in the University of Liege, Belgium, addressed the faculty and students recently on the subject, "How Belgium is trying to develop research."

John B. de E. M. Saunders has been appointed assistant professor of anatomy.

## Detroit College of Medicine and Surgery

C. C. Young, director of laboratories of the Michigan Department of Health, has been appointed head of the department of preventive medicine, exercising mainly a supervisory function, as he will not leave the state work in Lansing.

## St. Louis University School of Medicine

St. Mary's Infirmary, one of the hospitals of the Medical School, will be converted into a private hospital for negroes. The university will retain some control over the institution through the creation of an advisory staff composed of the directors of the various clinical departments. It will also aid in the medical administration and be responsible for the training of negro interns.

The following appointments to the administrative board are announced: Edward A. Doisy, professor of biochemistry; ; William H. Luedde, professor of opthalmology, and William E. Sauer, professor of otolaryngology. Augustus G. Pohlman, for sixteen years director of the department of anatomy, will give full time graduate instruction and research work. He will be succeeded by Daniel M. Schoemaker, acting director of the department of anatomy. Albert Kuntz, acting director, department of micro-anatomy, will be director.

## University of Texas Medical Department

A bequest of $10,000 has been received to be used in connection with the chair of mental diseases.

A. Lawrence Bennett has been appointed associate professor of physiology, suc-

ceeding Philip L. Gray, resigned. Harris S. Williams has been transferred from experimental surgery to surgical pathology and Robert L. Moore has been appointed to succeed him.

Ground has been cleared for the extension of the present Anatomy Laboratory building at a cost of $350,000.00. This extension is practically the size of the present building, and will give enlarged facilities in laboratories of pathology, anatomy and histology. Library space will be increased in the new extension in order to house approximately seventy thousand volumes.

The new Out-Clinic building, which was built for the School of Medicine by the Sealy-Smith Foundation, at a cost of over half a million dollars, is now in use. Here the juniors and seniors do a large portion of their clinical work.

A department of biological chemistry has been created. The director will be Meyer Bodansky, who is also in charge of the John Sealy Memorial Laboratories.

## University of Colorado School of Medicine

Paul Drews Garvin was appointed instructor in clinical pathology. Edward Delehanty was promoted from the rank of assistant professor of neurology to associate professor of neurology.

The Child Research Council has received $205,000 from the Commonwealth Fund, to be paid in seven annual installments. This fund provides for a full time director and research fellowships.

## University of Virginia

A joint health board of five members for Albemarle County and the city of Charlottesville has been created. One member will be appointed by the university, two by the county and two by the city. This board has full power to act in all matters pertaining to the public health in city and county, except in finances and promulgation of ordinances.

## Tulane University of Louisiana School of Medicine

The new Hutchinson Memorial Building was dedicated December 10, 1930. The nine-story building, which was made possible by a gift of $1,250,000 from the General Education Board of the Rockefeller Foundation, will be devoted to the care of the ambulatory sick and the injured admitted on appointment, and to instruction of medical students. Each student will be given his own office, in which the working arrangements will resemble closely those of private practice. He will examine and treat patients under the supervision of an instructor. There are 105 such offices, each of which is equipped with a small dressing room, an examining table, a desk, a laboratory table with equipment, a centrifuge and a wash-stand.

Administration offices and teaching facilities for the graduate school of medicine and third and fourth year student classes are provided. The work of the first and second years will be continued in the Richardson Memorial Building and in the science building.

## Vanderbilt University School of Medicine

Sir William B. Hardy of Cambridge University, England, will deliver the Abraham Flexner lectures for 1931.

The Abraham Flexner Lectureship was established in the Vanderbilt University School of Medicine in 1927 by Bernard Flexner of New York City. The lectureship brings in alternate years a scientist of international reputation to the School of Medicine. The lecturer spends a period of two months in residence at the School of Medicine in close association with its faculty and students.

Sufficient funds are provided not only for securing the best man in the world of science for the lectures, but provision is also made for the publication of these lectures.

## Medical College of Virginia

The Richmond Community Fund has appropriated $10,000 for the support of the outpatient department of the college. Dr. Stewart R. Roberts, professor of clinical medicine in Emory University School of Medicine, addressed the senior students recently.

A postgraduate clinic for negro physicians of Virginia is scheduled. It is the first educational venture of its kind in the south.

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## New York Homeopathic Medical College

The receipt from various persons of gifts and bequests approximating $200,000, is announced. Specific mention was made by two of the donors that research in arthritis and in diabetes should be made with the appropriation.

A grant of $500 was made by the Committee on Scientific Research of the American Medical Association for the researches of Dr. Israel S. Kleiner on crystalized enzymes.

The American Association for the Advancement of Science has given an additional gift of $50 for the work of Dr. Helen C. Coombs for a continuation of studies on the nervous control of respiration.

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## University of Maryland

The division of medical extension conducted the following program at the university: John M. T. Finney held a surgical clinic, January 15; Frank Evans spoke on "Treatment of Disturbances of Nutrition," January 22, and Richard A. Kern, Philadelphia, "Bronchial Asthma," January 29. Esther L. Richards gave an address on "Mental Hygiene Aspects of General Medicine," February 5, and Dean Lewis held a surgical clinic, February 12.

## Medical College of South Carolina

Austin T. Moore, Columbia, has been appointed a member of the faculty. He will spend one day each week in Charleston to deliver lectures and hold clinics and give demonstrations in ward work and surgery.

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## University of Cincinnati College of Medicine

The new Charles Franklin Kettering Laboratory of Applied Physiology was dedicated Dec. 12, 1930. It is designed primarily for research work in occupational diseases. Dr. Robert A. Kehoe is director. Mr. Kettering of Dayton and other industrial leaders, who contributed $130,000 for erection of the laboratory, have provided an annual fund of $40,000 for its operation.

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## University of Chicago

It is reported that the late A. B. Kuppenheimer bequeathed $2,500,000 to the university for medical research.

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## Louisiana State University College of Medicine

It is announced that in 1931 the Louisiana State University at Baton Rouge will open a college of medicine. Students will take their premedical work and the work of the preclinical years at Baton Rouge and the clinical work in New Orleans in the Charity Hospital. It is stated that the clinical courses will be of two kinds: one for teachers of nurses and the other for country physicians.

Clyde Brooks, former dean and professor of physiology and pharmacology in the School of Medicine of the University of Alabama, has been appointed professor of physiology and pharmacology in the new school.

tem, and Spanish, Scandinavian, Italian, Germanic and French medicine. These will continue until May 7, 1931.

Dr. Stephen d'Irsay, associate in the history of medicine, is scheduled for courses on the history of physiology, the history of universities and ancient and medieval scientific textbooks.

Dr. John Rathbone Oliver, associate in the history of medicine, will give an introductory course to the history of medicine for students who wish a survey of the whole field.

Dr. William H. Welch, professor of the history of medicine, will give weekly lectures during January, February and March on topics to be announced later. Sir D'Arcy Power, honorary librarian of the Royal College of Surgeons, England, recently gave a series of lectures.

## Hebrew University of Jerusalem

The medical department has been named the Dr. Julius Jarcho Medical Library in recognition of the part that Dr. Julius Jarcho has played in building up its library. The most important collections in the medical library, which now contains nearly 25,000 volumes, are said to have been donated by Dr. Jarcho, a member of the American Jewish Physicians' Committee, under whose auspices the library was founded.

## National Board of Medical Examiners

During 1930, 401 physicians completed their credits in the National Board's examinations by passing Part III. The 51 medical schools from which these diplomates graduated are: Harvard, 73; Columbia, 35; Medical Evangelists, 32; Cornell and Washington, 21 each; Pennsylvania, 20; Boston and Johns Hopkins, 13 each; Buffalo, 12; Rush, 11; Oregon, Virginia (University) and Yale, 10 each; McGill and Northwestern, 8 each; Michigan, 7; Colorado, Minnesota and Nebraska, 6 each; Albany, Vermont and Woman's, 5 each; George Washington, Jefferson, Long Island, Loyola, Rochester, Syracuse and Tufts, 4 each; Illinois, Maryland, Meharry, St. Louis and Toronto, 3 each; California, Edinburgh, Tulane and Virginia (Med. Coll.), 2 each; Beirut, Cincinnati, Georgetown, Iowa, Manitoba, Nebraska, Ohio, Stanford, Temple, Texas, Triple Qualification Board of Scotland, Western Reserve and Wisconsin, 1 each.

## Graduate Medical Education in Maine

The officials of the Central Maine General Hospital, Lewiston, under the auspices of the Harvard Medical School Courses for Graduates, have announced a plan of graduate medical education for districts removed from large medical centers. The method is to conduct ten teaching clinics either monthly or bimonthly. One thousand dollars has been devoted to put the project into operation, and Dr. Soma Weiss, assistant professor of medicine at Harvard Medical School, will head the service.

## Dental Clinic for Stockholm

George Eastman, Rochester manufacturer, has given $1,000,000 to the city of Stockholm, Sweden, for a dental dispensary similar to the Rochester Dental Dispensary and to those recently established by Mr. Eastman in London and Rome. The Stockholm clinic will include one feature not provided for in the other foreign cities, a school for dental hygienists similar to that of the Rochester dispensary.

## American Library Association

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### University of California

The new Life Sciences Building, which was completed in July, is about 500 feet long, 250 feet wide, five stories high, and in the form of a rectangle built around a court. There are 560 offices, laboratories, classrooms, auditoriums, and museum and library rooms, one auditorium seating 560 people and two smaller rooms each seating 208.

The departments housed in the building are bacteriology, anatomy, biochemistry, botany, household science, hygiene, vertebrate zoology and museum of vertebrate zoology, physiology, plant nutrition, psychology and zoology, and three bureaus of the state board of health maintain offices and laboratories there.

The building is constructed of reinforced concrete with natural finish on the outside. Interior partitions are made of sound-proof hollow tile painted white. The classrooms and auditoriums are finished in acoustic plaster.

### Residency in Orthopedic Surgery

An exceptional opportunity presents itself for any qualified recent graduate in medicine who desires further training in orthopedic surgery. On January first there will be a vacancy in the resident staff on the orthopedic and fracture service in the Los Angeles County General Hospital. The salary is $75 per month and full maintenance. The applicant must be a citizen of the United States and be able to obtain promptly a California license to practice medicine. Ex-interns and one possessing some executive ability preferred. Correspondence should be addressed to the medical superintendent of the hospital, Los Angeles, California.

## Deaths

Ross Hall Skillern, professor of laryngology in the Graduate School of Medicine of the University of Pennsylvania since 1918, died September 20, aged 54.

Frederic M. Strouse, assistant professor of laryngology in the Graduate School of Medicine of the University of Pennsylvania, died August 4, aged 66.

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Leland C. Ellis, associate professor of clinical surgery, Baylor University College of Medicine, died, aged 45, of injuries received in an automobile accident.

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William A. Jenkins, clinical professor of medicine in the University of Louisville School of Medicine, died, aged 69, of lymphosarcoma.

tem, and Spanish, Scandinavian, Italian, Germanic and French medicine. These will continue until May 7, 1931.

Dr. Stephen d'Irsay, associate in the history of medicine, is scheduled for courses on the history of physiology, the history of universities and ancient and medieval scientific textbooks.

Dr. John Rathbone Oliver, associate in the history of medicine, will give an introductory course to the history of medicine for students who wish a survey of the whole field.

Dr. William H. Welch, professor of the history of medicine, will give weekly lectures during January, February and March on topics to be announced later. Sir D'Arcy Power, honorary librarian of the Royal College of Surgeons, England, recently gave a series of lectures.

## Hebrew University of Jerusalem

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# Personals

Robert R. Bensley, professor of anatomy in the University of Chicago, gave the annual Alpha Omega Alpha address at the St. Louis University School of Medicine.

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Cyrus C. Sturgis, professor of internal medicine in the University of Michigan Medical School and director of the Simpson Memorial Institute, recently delivered a lecture on the "Treatment of Pernicious Anemia," before the St. Louis Medical Society.

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David Riesman, professor of clinical medicine in the University of Pennsylvania, has been appointed consultant to the Committee on the Costs of Medical Care.

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J. Howard Brown, professor of bacteriology in Johns Hopkins University School of Medicine, was elected president of the American Society of Bacteriologists.

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E. Gordon Young, professor of biochemistry in Dalhousie University, was elected president of the Nova Scotian Institute of Science.

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L. J. Rhea, associate professor of pathology in McGill University, is leaving for London to do some research work on insular sclerosis.

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E. H. Cary, professor of ophthalmology in Baylor University College of Medicine, was awarded first prize for a scientific exhibit on tumors of the eye and adnexa at the meeting of the Southern Medical Association.

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Max M. Zinninger, of Cincinnati, has been appointed assistant professor of surgery in the College of Medicine of the University of Cincinnati.

George H. Whipple, of the University of Rochester, and George R. Minot, of Harvard Medical School, are joint recipients of the *Popular Science Monthly's* first annual reward of $10,000 for the current achievement in science of the greatest benefit to the public.

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Charles G. Nuxter, of Boston, has been appointed assistant professor of surgery in Harvard Medical School.

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P. J. Hanzlik, professor of pharmacology in Stanford University Medical School, recently delivered four lectures on the use of bismuth compounds in syphilis, metallotherapy of edema, intravenous therapy and the use of colloidal dyes in intoxications before San Diego, Long Beach and Los Angeles medical societies.

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Mazyck P. Ravenel, professor of preventive medicine and bacteriology in the University of Missouri, was appointed consultant in public health and medical education to the Missouri State Board of Health.

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Walter B. Cannon, professor of physiology in Harvard Medical School, has received the degree of doctor honoris causa from the Universities of Liege and Strasbourg.

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James Ewing, professor of pathology in Cornell University Medical College, delivered the tenth annual Beaumont lectures before the Wayne County (Mich.) Medical Society.

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Stephen Rushmore, at one time dean of the Tufts College Medical School, has been appointed to the Massachusetts Board of Registration in Medicine.

The Medical Board of the Memorial Hospital, New York, gave a testimonial dinner in honor of Dr. Ewing, January 31.

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In the January issue it was reported that Le Roy C. Abbott will head the department of orthopedic surgery in Stanford University. This was an error. Dr. Abbott heads this department in the University of California Medical School with the rank of clinical professor of orthopedic surgery.

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H. P. Smith, associate professor of pathology in the University of Rochester, has been appointed professor of pathology in the University of Iowa School of Medicine.

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J. F. Rinshart has been promoted to assistant professor of pathology in the University of California Medical School.

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J. T. Myers, associate professor of bacteriology in the University of Nebraska College of Medicine, has been promoted to professor of bacteriology and public health.

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George R. Minot and William P. Murphy, of the Harvard Medical School, received the 1930 Cameron prize of the Faculty of Medicine of the University of Edinburgh.

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David Marine, assistant professor of pathology in Columbia University, was presented with the gold medal of the New York Academy of Medicine.

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W. S. Leathers, dean of Vanderbilt University Medical School, has been appointed a member of the National Advisory Health Council of the Federal Public Health Service.

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Harry T. Hillstrom, Minneapolis, has been appointed head of the department of roentgenology at Vanderbilt University.

Francis Bayard Carter, professor of obstetrics and gynecology in the University of Virginia, has accepted the professorship in these departments in Duke University School of Medicine and Duke Hospital. He enters on his new duties July first.

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Edward A. Boyden, professor of anatomy in the University of Alabama School of Medicine, has accepted the professorship of anatomy in the University of Minnesota Medical School, succeeding Richard E. Scammon, now in the University of Chicago.

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David T. Smith, of the New York State Tuberculosis Sanitarium, has resigned to accept an associate professorship in medicine in the Duke University School of Medicine.

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Martin H. Fischer, professor of physiology in the College of Medicine of the University of Cincinnati, will deliver a series of fifteen lectures in March at the Metropolitan Museum of Fine Arts, New York City, on the Technique of Art Production. These lectures are sponsored by the American Artists Professional League under the auspices of the School of Fine Arts of New York University.

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Henry E. Michelson, professor of dermatology, University of Minnesota Medical School, has been elected a Corresponding Member of the Vienna Dermatological Society. He is also the newly elected president of the Chicago Dermatological Society.

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A portrait of Harry Burr Ferris has been presented to the Yale University School of Medicine by his former students and colleagues. Professor Ferris has been a teacher of anatomy at Yale for forty years. In 1897 he was appointed E. K. Hunt professor of anatomy, which position he now occupies.

# Abstracts of Current Literature

## Medical Education and Medical Practice

At the Third Graduate Fortnight of the New York Academy of Medicine held recently, Chas. F. Martin, dean of the Faculty of Medicine of McGill University, discussed medical education in its many aspects and compared the systems in vogue in foreign countries with those in America. In particular he pleaded for a broad general education as the basis for a medical career. In regard to the continued education of the practitioner he said: one cannot well dissever graduate teaching from the antecedent training. According to his special preliminary advantages of birth, training and opportunities, so will the graduate be guided in his later career. Modern medicine has been demanding more and more access to laboratories and hospitals, which is essential to the growth and maintenance of professional power. The great majority of physicians, however, have had too little contact with these agencies, and relatively few take full advantage of the opportunity. Continuation courses for practitioners represent a need in medical education worthy of very careful consideration. The clinical resources of a great city in a university setting alone offers an opportunity for the organization of graduate teaching. The success, however, depends as much on the segregation of the graduate students as it does upon the teacher.

Mass training in postgraduate work in detail is certainly not feasible, though much may be done to large groups to maintain their interest, to instruct and to entertain, and this can be done by lectures, clinics and demonstrations. And what may one say for the continued education of the older practitioner—for him who absorbed in years of general practice has been allowed too little leisure for keeping abreast of medical progress? The answer is not so easy.

Medical science has become so vast, so dependent on the biological sciences, so highly specialized in every direction—the individual spheres of knowledge have become so interdependent, that a choice is difficult for him who seeks to gain a refreshment where progress has been so appallingly rapid. Apart from the opportunities of wards and dispensaries, he will be confronted with the choice of study in laboratory technic, in highly specialized courses in serology, radiology or any of the similar advanced subjects of postgraduate study. In his effort, for example, to study focal sources of infection he may learn to differentiate a normal from an abnormal dental condition, mere absorption from focal abscess of the teeth. He may even transilluminate, with some degree of skill, the sinus cavities, or detect an abnormal shadow in the actinogram. If more ambitious and lucky in his technic, he may acquire some dexterity in the newer methods of examination of the gall bladder, and even study the pyelograms of the normal and abnormal kidney, and he may familiarize himself with the diagnostic study of cerebrospinal fluids, or learn bacteriologically the various types of pneumonia.

In such short courses, however, without the preliminary and more prolonged fundamental training he will not only fall short in manipulative skill but fail to appreciate the relative values of what he learns to see. Without experience and judgment he cannot expect to go very far, and there is no short cut to such an achievement. There pour into these graduate, or refresher, courses, as they are called, men, each with individual ambi-

tions and ideals, and each with a different zeal for knowledge. Each is staggered at the choice, uncertain how best to use his time. The danger lies in wanting to learn too much, in wanting to taste too many of the intellectual savouries of the banquet. He is apt to do as so many have done before him in Vienna and avail himself of so many courses that, at the end of his short weeks of study, he suffers from intellectual indigestion. Far better would it be for such a one to curb his ambitions, confine himself to the reasonable, restrict his interests to a limited sphere and by attaching himself to one service, or one teacher, whom he respects, and allow his mind to gain inspiration, knowledge, and a degree of judicial discrimination.—(*New York St. J. Med.*, Dec. 1, 1930.)

## Anatomy: Physiology: Radiology

The living conception of human anatomy and physiology that is opened up by radiology presents a new outlook on such subjects. Roughly, anatomy deals with form, while physiology is confined to function. To the radiologist and to all who study the living subject, this or any other artificial division is altogether impossible. The radiologist cannot study form without considering function, nor can be consider function without taking form into consideration. From the radiological point of view, anatomy and physiology cannot be divorced from each other or from pathology; the one slides imperceptibly into the other, and there is a wide border-line that is common to each. To divide in order to classify may be convenient, but it is wrong, unnatural, and leads, in practice. to a mistaken conception. Radiologically, at any rate, there is no dividing line in this section between anatomy and physiology. There is also a point where physiology and pathology melt imperceptibly into each other, and the further we trace things back towards the elements, the more impossible it becomes to draw a dividing line and say where the normal cell changes its character and becomes pathological. So far as radiology is concerned, these three essentials of all medical training, anatomy, physiology, and pathology, are so bound up with each other, and so intimately concerned with the diagnostic side of radiology that it is a little short of folly to attempt to separate them, and regard them as separate subjects. A. E. BARCLAY, *Lancet*, Dec. 13, 1930.

## How Do Students Learn

Many students, be their credentials what they may, do not yet know how to learn, how to observe or how to think. If, in his college course, he has concentrated his attention on the sciences—whereby he may learn by the experimental method how to think and observe—if he has used this method as his chief source of training, and thereby become efficient through so-called self-education, he will in all probability have acquired his knowledge at the sacrifice of general knowledge and breadth of learning.

The generally accepted opinion of this country seems to be that students learn more through the laboratory by experiment and when left to their own resources, than they do in the lecture room or the clinic. For this reason, students are encouraged in research, and the better ones are segregated from those of average standing. If by research we simply mean the attitude of mind which every student should adopt, wherever his work may be, it is, after all, but another name for training in observation and judgment, no matter which line of work he may care to select.

The trouble is that the experimental method for the average student wastes too much time. Let the average student rather believe what the professor *tells* him—that there are 3600 seconds in an hour, instead of counting by the clock for an hour.

The average students, for the most part, have neither the desire nor the capacity to profit by the purely experimental method. C. F. MARTIN, *Bull. N. Y. Acad. Med.*, December, 1930.

## Optometry in Southern California University

The Los Angeles Examiner of November 19 contained a large three column photo cut of a University of Southern California co-ed undergoing a keratometer eye examination. The cut was illustrative of a news item which was captioned: "Weary Optics Cause Crashes, Says Expert—Man's Eyes, Still Primitive, Not Yet Adapted to Helter Skelter of Modern Traffic." The expert referred to, and whose photograph appeared with that of the University of Southern California co-ed in the cut just referred to, according to the newspaper account, was "Dr. A. M. Skeffington of Chicago, internationally known authority on eyes and director of the Graduate Foundation of Optometry. He is conducting a series of clinics this week at the University of Southern California." The newspaper reporter, among other things, quoted the expert as follows: "The eye is the barometer of health, measurement being by the nervous stimulation as it affects eye response to color," he declared. " 'Adaptation of eyes to modern conditions—the preservation of visual efficiency—is the scope of optometry,' stated Doctor Skeffington." The authorities of the University of Southern California are seemingly in line or sympathy with some of these publicity efforts. This is perhaps due to the fact that the University of Southern California several years ago absorbed the Los Angeles School of Optometry and made it one of its departments, making provision to grant degrees in optometry to graduates of the department. The University of Southern California did this at the time that it is trying to launch a Class A medical school to revive its former medical department. It must be confessed that this dual effort of a presentation of a full-fledged school of optometry, side by side with a school of medicine seeking Class A rating from the Council of Medical Education of the American Medical Association and the Association of American Medical Colleges is somewhat out of the ordinary. However, times are rapidly changing, and this new procedure may be nothing more than an advance or pioneer example. The experiment will no doubt be watched with much interest by the large California group of well known alumni of the former University of Southern California medical schools, and by other medical and lay citizens who keep in touch with educational matters. No matter how the experiment may turn out, and the friends of the university wish it well, the fact remains that the newspaper publicity above referred to, in connection with the "Graduate Foundation of Optometry" clinics is just a wee bit unusual, when considered as being under the sponsorship of so large and well known an institution as the University of Southern California. (*Ed. California Medicine*, December, 1930.)

## The Medical Teacher

Leadership in clinical teaching should be in the hands of men whose chief concern is the care of hospital and dispensary patients, the teaching of students, as well as the prosecution of research.

It is scarcely recognized in medical education that the science and art of teaching is a special calling. The average professor of clinical subjects is far too much engaged with the daily routine to devote himself as an expert in pedagogy to the teaching of medical students.

All the information which a teacher has to convey may be presented on the printed page, with tricks of type and paragraph, apt for emphasis and for orderly perspective. Diagrams and illus-

trations add further values, and so it is argued it is the book and not the lecture that should be the modern educational instrument. The lecture survives by force of precedent and tradition, and the student would be better occupied in his study and the professor in his library and workshop. Such is the indictment urged against the lecture as a teaching method.

But the object of education is not solely the implanting of facts in the student's brain and memory. Teaching, or education, is much broader in its scope. Its purpose is not merely to inform the mind, but to develop and strengthen it, to cultivate habits of thought, reasoning and mental order, and to encourage a capacity for judgment for the weighing of evidence and for a broad and balanced outlook.

The ordered presentation of knowledge afforded by the book is, of course, the ground work of the student's equipment, but its framework is severe, inelastic, unemotional and is apt to present a somewhat forbidding front. It is only the exceptional writer who is able to confer on the technical textbook the qualities that excite an appetite for learning and provide the glow of enthusiasm and the need of human interest.

If the profession is to be recruited from men of high mental calibre, ability and wide sympathies, there must be provided in medical life and training, not only the means of livelihood and an opportunity for craftsmanship, but likewise those subjective influences which contribute to mental growth and development.

Systematic lectures should be an agreeable interlude of laboratory and hard work, a mental recreation and stimulus in which the personality and the character of the teacher—perhaps more even than the facts presented—leave an indelible impress on the student's mind.—C. F. MARTIN: *Bull. N. Y. Acad. Med.*, Dec., 1930.

## Materia Medica and Practice of Medicine

Materia medica in its widest sense—pharmacology, pharmacodynamics—call it what you will—is the science on which sound therapeutics is and always must be based. It should not be divorced from the practice of medicine. To my third year students, therefore, I propose to teach pharmacology as an applied science, always with the view to bringing it into relation with general medicine; and to final year students I intend offering a voluntary systematic course in the principles and practice of rational treatment. I hope to do more. The authorities of this university have realized that a clinical appointment is an essential adjunct to the chair of materia medica. My aim will be not only to abolish the artificial barrier which has been set up between the clinic and the laboratory, but to help to turn out students of medicine with a sound and critical first-hand knowledge of the treatment of disease.—D. CAMPBELL, *Lancet*, Dec. 6, 1930.

## The Medical Curriculum

Nothing can be more ludicrous than to compare the curricula of different schools with respect to the importance attached to individual subjects by the number of hours considered essential for the training. This wide variance in itself is ample proof of our unsettled views, and is further sufficient evidence in favor of the elective system. It is not good, of course, that all schools should be so standardized, nor that a student should proceed in lock step from class to class. Let the student, the unwilling victim of a "syllabitis," as it has well been called, work at a speed to suit himself, conforming only to the rules and regulations of the department, and controlled by the examination system of the university. Three general examinations alone should be necessary—one at entrance, one for the combined pre-clinical sciences, as in

Edinburgh, and a final one to determine broadly his general fitness to practice his profession. Such examinations should test a student's knowledge and what he can do with the knowledge he possesses, rather than the facts he may have acquired. Course examinations are things to be deprecated—evidence not of knowledge and understanding, but of an ability to cram facts in a given space of time.

European students on entrance examination know fewer things than ours do, but they are better educated, more alert to find their way, more personally responsible, and, therefore, more free to choose.

I should like to see in our better schools, courses offered as freely as possibly, to be taken when and where the student chooses. Courses of no value would then soon die a natural death. Demand and supply, competitive teaching and the inspiration of the individual professors will readily determine the method of suppressing either a poor student or a poor instructor.

It is high time that we boldly abandon the rigidity of our system, define the minimum work for each student—considering always his aim and whether his aspirations lead him to practice, to specialism, to science or teaching. A return to the shorter period of study would soon result—a four years' course of nine months, or even a three years' course of 11 months each, with the added year of a guided hospital service. With an elective system in the better schools, and an honor's course throughout for students with academic ambitions and ideals, the path is well defined.—C. F. MARTIN: *Bull. N. Y. Acad. Med.*, Dec., 1930.

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## Premedical College Training

Even if it be granted that here in North America all men are born equal, the fact is that they do not remain equal for any length of time. Some have the advantage of means, leisure, discipline, good schools, good masters and that indefinable advantage that comes from birth and breeding, besides that more obscure quality personal to each individual and inherent in himself alone. On the other hand, large numbers go through life handicapped in one or more of these privileges.

A striking feature of our modern system lies in the fact that medical education has, unfortunately, become far too much a thing apart. Upon the average college boy, who contemplates the study of medicine, is imposed a modicum of scientific subjects, which, in the short time at his disposal, he can learn only superficially, and that, too often at the sacrifice of cultural training. A university training, assuming it is worthy of the name, makes each part of the curriculum contribute something to the mental discipline and training of the student. Without it life has a less dignified ambition and less expansive horizon.

The lack of some classical training to the student of anatomy makes its study a difficult feat of memory in nomenclature rather than a discipline in thinking and observation. The derivation and significance of the strange anatomical terms, he cannot appreciate. Is it our lower standards or the too specialized training that explain the obvious defects in his knowledge of English, its composition, its expression, and even its spelling, not to mention what is politely called his "conversation." A reading knowledge of some modern foreign language is similarly a requirement more honored in the breach than in the observance. To personality and character, breeding and the humanities, so fundamentally essential to the professional man, greater attention may reasonably be directed, and opportunities afforded to cultivate these as an integral part of pre-medical training.—C. F. MARTIN, *Bull. N. Y. Acad. Med.*, Dec., 1930

# Book Reviews

## Development of Anatomy

Textbook and Laboratory Manual of Embryology. By Leslie B. Arey, Professor of Anatomy, Northwestern University. 2nd Ed. W. B. Saunders Company, Philadelphia. 1931. Price, $6.50.

A complete revision of text and addition of 435 new drawings, making a total of 1037 drawings, brings this work up to date. Lists and tables collect and summarize certain data in tabular form. Specific malformations are discussed fully and important anomalous conditions are well illustrated. Teratology and teratogenesis are presented as important topics to the medical student. Of special value is the fact that the entire book is based on the human embryo, hence it should find favor with medical teachers and medical students. The book is well made, set in clear, very legible type; the illustrations are clarifying and the author's conceptions of his subject and style of presentation are highly commendable.

## Medical Biometry and Statistics

By Raymond Pearl, Professor of Biology in Johns Hopkins University Medical School. 2nd Ed. 1931. W. B. Saunders Company, Philadelphia. Price, $5.50.

Whether this topic makes a wide appeal or not, the fact remains that year by year it is receiving more recognition, and delay in introduction into the curricula of medical schools can only be ascribed to the scarcity of men who have been trained therein sufficiently well to make a worthwhile presentation. The subject must necessarily be of great interest to men who wish to make public health work their vocation. The author is master of his subject. He has written a valuable book, one which will no doubt increase in popularity as biometry increases in its appeal to biologists and physicians.

## The Pathology of Internal Diseases

By William Boyd, Professor of Pathology in the University of Manitoba. Lea & Febiger, Philadelphia. 1931. Price, $10.

This is probably the best effort to correlate pathologic anatomy and pathologic physiology with the clinical manifestations of the various diseases that has appeared for many years. It is not a textbook of pathology but one on the pathogenesis of disease. It effectually brings pathology out of its isolation as a preclinical subject and gives it its rightful place—clinical medicine based on changed anatomy and physiology. A thorough knowledge of normal anatomy and normal physiology and the alterations met with in both fields constitutes clinical medicine. And here is a book that presents the subject of pathology entirely from that point of view. "Whys" and "wherefores" and "whereases" are made clear by one who evidently has not been content to look at pathologic tissues and organs merely to classify them—but who has asked himself often why it is so. What does it all mean? Students will find this book as good reading as one of Edgar Wallace's detective stories—more entertaining and immensely more profitable. It is the basis of practice and even logical and effective treatment. It is an outstanding piece of work and should find many admirers and supporters.

## Diseases of the Digestive System

By L. Winfield Kohn. 2 Vols., F. A. Davis Company, Philadelphia. 1931. Price, $12.

The fact that history taking, physical examination and objective findings are

stressed must be considered a good reason for asking medical students to read this work. Gastrointestinal diseases form a large part of every physician's daily work and the author approaches the subject mostly from the standpoint of physiologic aberrations, thus the subject is presented logically and clearly. Practitioners will find these books of great value and very easily read and understood. Numerous illustrations add to the clarity of the text.

## Microbiology and Elementary Pathology

By Charles S. Sinclair, Instructor in Bacteriology Army Medical School. F. A. Davis Company, Philadelphia. 1931. Price, $2.50.

This book is written more specially for the student nurse rather than the medical student. It is a commendable presentation.

## Modern Surgery: General and Operative

By John Chalmers Da Costa, Professor of Surgery in Jefferson Medical College. 10th Ed. W. B. Saunders Company, Philadelphia. 1931. Price, $10.

The reviewer finds himself at a loss for words which will do justice to this well known and widely used textbook. What medical student has not read Da Costa? Who is not familiar with many if not all of its 1400 pages. If there be such, they will do well to buy a copy and place it where it can always be reached easily and quickly. Easily the outstanding textbook in surgery.

## Intestinal Toxemia Biologically Considered

By Anthony Bassler. F. A. Davis Company, Philadelphia. 1931. Price, $6.00.

Not a book for the medical student, but he should bear it in mind as something that will prove profitable reading when he is ready for practice.

## Bacteriological Technique

By J. W. H. Eyre, Professor of Bacteriology in the University of London. 3d Ed. William Wood and Company, New York. 1931. Price, $7.50.

The first edition of this book was published twenty-eight years ago. This edition incorporates newer methods and will make a special appeal to graduate and postgraduate students. It has stood the test of time. Students of nearly a generation ago used it and liked it. Students of today will find it just as useful as did those of former years.

## A Textbook of Gynecology

By Arthur H. Curtis, Professor of Obstetrics and Gynecology, Northwestern University Medical School. W. B. Saunders Company, Philadelphia. 1931. Price, $5.00.

This is said to be an essentially complete presentation of all that the author believes is vital in gynecology. The text numbers only 350 pages, including 222 well made illustrations—all original, mostly made from the author's personal cases. The shortening of the courses in gynecology in medical schools should make this a popular textbook. Every subject is presented briefly, but receiving full value. The author ranks high as a teacher and deserves praise for having prepared a really good textbook for the medical student.

## Traumatotherapy: Treatment of the Injured

By John J. Moorhead, Professor of Traumatic Surgery in New York Post-Graduate Medical School. W. B. Saunders Company, Philadelphia. 1931. Price, $7.00.

Not a book for the undergraduate medical student, but of great value to the practitioner, especially he who is called to treat accident cases. The author's large personal experience and years of devotion to this subject makes him an authority. He discusses clearly all the usual and most of the unusual effects of trauma.

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